MARYLAND GEOLOGICAL SURVEY
Merryman Hall
The Johns Hopkins University
Baltimore, Maryland 21218
(301) 235-0771

COUNTIES (MD/PA) CECIL/CHESTER
M&D milestone no. (crownstone) 5 (6)
MHT-HSI no. CE-IV-1015

PROTECTED/ENDANGERED/MISSING

FIELD SHEET: MASON & DIXON LINE, MARYLAND-PENNSYLVANIA BOUNDARY MARKER SURVEY

LOCATION: USGS 7.5'quadrangle Bay View **UTM** 18.42412.439708
? **original site/moved/date** 1766 **bench mark/date** none observed
About 1.5 mile NW of Fair Hill, MD; about 0.5 mile W of Lewisville, PA; about 1000' S off Lewisville Rd & Durborow farmhouse in cultivated field about 20' E of hedgerow at unmarked point E/S farm service lane. Unexposed; cannot be seen at distance or detected closeup.

DIRECTIONS TO SITE:
From M&D 3 (4): retrace roads to Lewisville & junction of PA 472; follow 472 W about 0.4 mile to Durborow farmhouse on S/S; park in drive & check with owner for access. Follow farm lane along hedgerow to site.

DESCRIPTION/MEASUREMENTS: original/replica/replacement/date 1766; squared oolitic limestone post, buried under several inches of soil

N face (PA):	11" wide x high; Penn coat of arms intact; chips at edges; some fluting remains
E face:	11" wide x high; some fluting remains
S face (MD):	11" wide x high; Calvert coat of arms intact; chips at edges; large chip SE edge near top
W face:	11" wide x high; some fluting remains; large recent chip top edge
top:	11" x 11"; no planes discernible, all edges chipped, large pit in apex
bench mark:	none indicated on maps; none observed

CONDITION OF MARKER/FOUNDATION: excellent/good/fair/deteriorated/ruins/unexposed

1900-03 Resurvey notes (order no. 6), as in MGS Vol. 7, 1908, p. 83
6. Milestone No. 5, M.& D., 1766, "crown stone," in field south and west of Lewisville, Pa. This stone had been mended with iron clamps.

1950 Inspection notes (present order no. 5 , photo no. 5) as in Bayliff, 1959, Appendix C, p. 94
6. Original crownstone still standing, but almost covered with earth. Stands in cultivated field and is chipped, probably by farm machinery. Farmer wishes the stone removed to a nearby point on the Line.

1979-80 Inspection notes: order no. 5 (6), photos/slides no. 5 (6)
5(6) Original/M&D crownstone of 1766 in place, in fair condition, apparently firmly set; coats of arms intact, chips all corners & edges, top worn & pitted, thinly covered with earth. Endangered by site, unmarked & exposed to farm machinery.

SURROUNDING PROPERTY OWNERS (MD/PA): names, addresses, phones
MD: tax map 6 , block , P. 9 , deed RCC78/120 , ac. 23.36 **index**
Harry G. Durborow, Box 63, Lewisville, PA 19351 Phone (215) (610) 932-8603

PA: tax map 70-4 block , P. 58 , deed / , ac. , **index**
Harry G. Durborow & Emily Durborow
(Grandfather) Father "Pal"

RECORDED BY: names, addresses, phones, dates Alice Martin 3/16/80
14308 Mount Ave., Phoenix, MD 21131 (301) 472-2128
Assisted by Mr. Frank J. Perozziello & sons Eric & Mike
3333 Offutt Rd., Randallstown, MD 21133 (301) 922-2477
Also see: reverse side X , B&W photos X , negatives X , color slides X , maps X , MHT-HSI form , other X

AM 12/79 rev 6/80

NOTES

There is some question as to whether or not this stone has been moved since the 1950 inspection. The Perozziellos had been told (prior to 3/16/80) by a Mr. Harold Hicks (at M&D 4) that he helped people move this stone about 200' away from the original site. We were unable to verify this from map locations or in talking with owner (Mr. Durborow). We dug the soil away to a depth of about 18" and did not observe iron clamps (used for mending in 1900-03) or lack of base.

PROBLEMS. This stone is unmarked, is covered by several inches of earth, and is greatly endangered by exposure to farm machinery. Mr. Durborow was willing to let us search for the stone, but didn't lead us to the site. After quite some time and/our testing with shovels, he pointed to general area. By sheer luck, Mr. Perozziello noticed corner of stone. When through with our digging, the owner asked that we recover the stone with earth and leave no stick or marker.

RECOMMENDATIONS. We suggest official contact with the owners soon to discuss plan for future protection of the stone. This should include an on-site visit led by Mr. Durborow and: (1) determining whether stone has been moved, by whom and when, whether on the Line; (2) requesting sufficient recontouring of area around stone by owner to bring above grade level approximating that shown in Trussell 1948-50 photos; (3) marking with witness post.

B&W PHOTOS/NEGATIVES

5x7	SE corner (neg # 1980.10.36)	Alice Martin	3/16/80
5x7	NE corner (neg # 1980.10.32)	"	"
3½x5	View N (neg # 1980.10.33)	"	"
3½x5	View W (neg # 1980.10.34)	"	"
3½x5	View SW (neg # 1980.10.36+)	"	"

COLOR SLIDES

SE corner (1980.7.28)	Alice Martin	3/16/80
NW corner (1980.7.29)	"	"

MAPS

USGS 7½' topographic quadrangle section
1900-03 Resurvey engineer's map (Plate VI), updated
MD tax map section

OTHER

4 B&W duplicate contact photos (1948-50), 3 3/8x5¼, gift to MGS by Maryland Historical Society (Prints & Photographs Dept.) deaccessioned 10/15/80 from Trussell Collection PP2 (14.4, 14.3a, 14.2, 14.6a)

CE-IV-1015

MASON & DIXON WEST LINE: MILESTONE 5 (6)

BAY VIEW QUADRANGLE

MARYLAND—PENNSYLVANIA

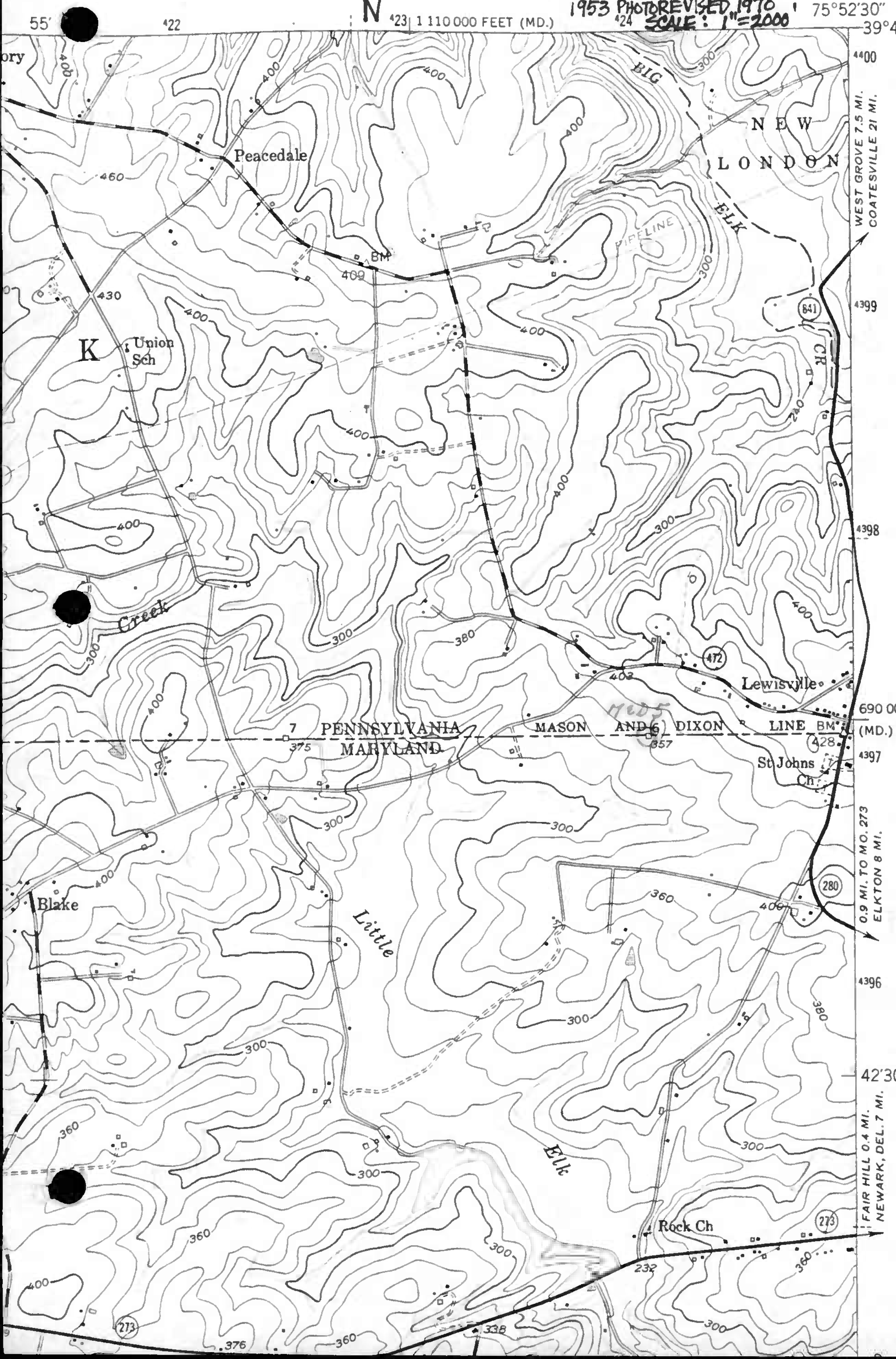
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

NW/4 ELKTON 15' QUADRANGLE

1953 PHOTOREVISED 1970

SCALE: 1"=2000'

5863 IV SE (WEST GROVE)



N
55'
422
423
1 110 000 FEET (MD.)
424
75°52'30"
39°45'
4400
4399
4398
4397
4396
42'30"
Peacedale
Union Sch
K
BIG
ELK
CR
NEW
LONDON
PIPELINE
BM
409
430
460
400
300
380
403
240
641
472
Lewisville
690 000 FEET (MD.)
PENNSYLVANIA
MARYLAND
MASON AND DIXON LINE
7
375
357
428
St Johns Ch
Creek
Blake
Little
Elk
360
280
Rock Ch
273
232
338
376
WEST GROVE 7.5 MI.
COATESVILLE 21 MI.
0.9 MI. TO MO. 273
ELKTON 8 MI.
FAIR HILL 0.4 MI.
NEWARK, DEL. 7 MI.

MG5 HAF-ASI: CE-IV-1015

MASON & DIXON WEST LINE: MILESTONE NO. 5 (CROWNSTONE)
N.E. CORNER, AS SEEN [illegible]

[illegible]

HGS MHT-HSI: CE-IV. 1015

MASON & DIXON WEST LINE: MILESTONE NO. 5 (CROWNSTONE), LOOKING NORTH TOWARD STONE & DURBOROW FARM
L TO R: ERIC (MR DURBOROW) ON TRACTOR, MIKE & MR. DERBEZIELLO
PHOTO: ALICE MARTIN 3/16/80 (1980.10.33)

X

5

MGS

MHT-HSI: CE-IV-1015

MASON & DIXON WEST LINE: MILESTONE NO. 5 (CROWNSTONE) SE CORNER (CALVERT COAT OF ARMS /—)

PHOTO: ALICE MARTIN 3/16/80 (1980.10.36)

MES MAT-MSI: CE-IV-1015

MASON & DIXON WEST LINE: MILESTONE NO. 5 (CROWNSTONE), LOOKING WEST TOWARD STONE
L TO R: MIKE, ERIC, & MR. F. J. PERRIELLO

PHOTO: ALICE HARTIN 3/16/80 (1980.10.34)

X STONE
PARTIALLY EXCAVATED

MHS TRESSELL COLL: PP2.14.2

#5-C.S

MILESTONE 10.5 (CRUISE) c/s
+ DR. TRESSELL

5625

gift to MCS from MHS (Printed Photographs) 10/15/86

MHS TRISSELL COLL: PP2.14.6a
(neg 24.31. PP2)

MASON-DIXON WEST LINE;
MILESTONE 1[illegible].5 (CROWN STONE) N/S
+ DR TRISSELL

562

gift to MGS from MHS (Private
Photographs) 10/15/80

MHS TRUSSELL COLL: PP2.14.4
(neg Z4.28.PP2)

MASON DIXON WEST LINE:
MILESTONE NO. 5 (CROWNSTONE)
S/S + ELSIE MARSDEN c.1948-50

5621

gift to MGS from MHS (Prints & Photographs) 10/15/50

MHS TRUSSELL COLL: PP2.14.3a
(neg 24.27.PP2)

MASON & DIXON WEST LINE:
MILESTONE NO. 5 (CROWNSTONE) S/S
[illegible] TRUSSELL &
ELSIE MARSDEN ± 1948-50

5621

gift prints from MHS (Prints & Photographs) 10/15/80

MGS MHT-MSI: CE-IV-1015

MASON & DIXON WEST LINE: MILESTONE NO. 5 (CROWNSTONE), LOOKING SW TOWARD STONE SITE AT EDGE OF FARM LANE & N EDGE OF PLOUGHED FIELD

PHOTO: ALICE MARTIN 3/16/80 (1980.10.36+)

MGS MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: ALICE MARTIN COPY

FLINTSTONE QUADRANGLE
MARYLAND–PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
1950 PHOTOREV. 1974

ALLEGANY CO. (23)

(153) — (160)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

√ M&D — (160): NEW STONE MON ADDITION (1902) IN MOUND OF EARTH
UTM: 17. 704 10. 439948
AL-IIA-139
A&C 10/4/81

√ M&D — (159): NEW STONE MON ADDITION (1902)
AL-IIA-138
A&C 10/4/81
UTM: 17. 70496. 439950

√ M&D — (158): NEW STONE MON. (1902) IN LARGE REBUILT MOUND OF STONES (1766, 1902)
A&C 9/21/81
AL-IIA-137
UTM: 17. 70684. 439954

√ M&D — (157): NEW STONE MON. ADDITION (1902)
A&C 9/21/81
AL-IIA-136
UTM: 17. 70809. 439958

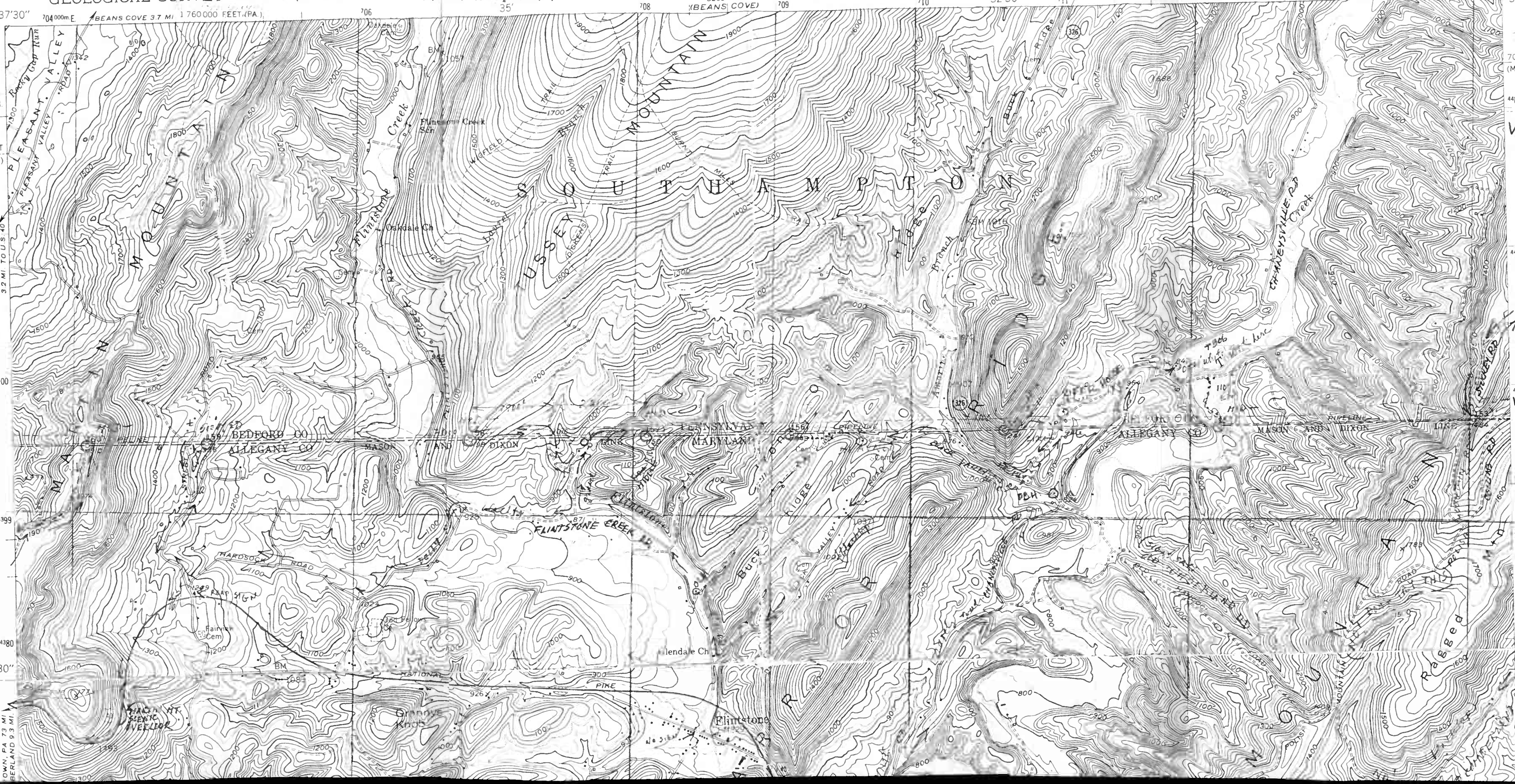
M&D — (156): NEW STONE MON ADDITION (1902)
A&C 9/21/81
AL-IIA-135
UTM: 17. 70914. 439959

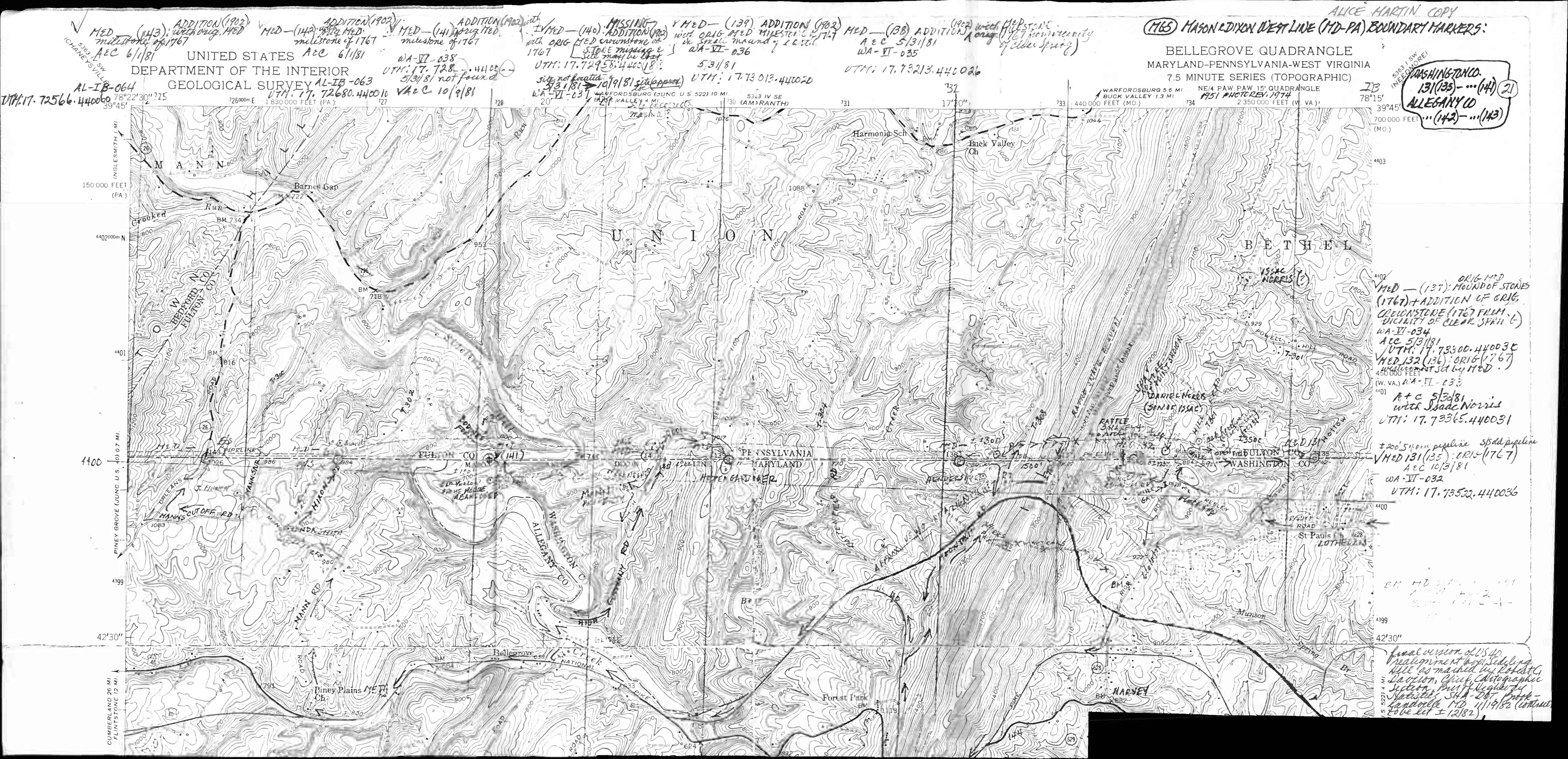
√ M&D — (155): (1902) NEW STONE MON. ADDITION TO LARGE OLD MOUND OF STONES
A&C 9/21/81
AL-IIA-134
UTM: 17. 71066. 439963

√ M&D — (154): NEW STONE MON. ADDITION (1902)
A&C 9/21/81
AL-IIA-133
UTM: 17. 71220. 439967

√ M&D — (153): NEW STONE MON. ADDITION (1902), NEW
A&C 9/20/81
AL-IIA-132
UTM: 17. 71413. 439975

verify road names: Flintstone Creek Rd (on tax map) vs Dolly Rd on MGS map (guide)




ALICE MARTIN COPY
(1765) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS:
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BELLEGROVE QUADRANGLE
MARYLAND-PENNSYLVANIA-WEST VIRGINIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 PAW PAW 15' QUADRANGLE
1951 PHOTOREV. 1974
WASHINGTON CO. 131(135)—…(141)
ALLEGANY CO …(142)—…(143)
M&D—(143) ADDITION (1902) with orig. M&D milestone of 1767
A&C 6/1/81
AL-IB-064
UTM: 17.72566.440060
M&D—(142) ADDITION (1902) with orig. M&D milestone of 1767
A&C 6/1/81
AL-IB-063
UTM: 17.72680.440010
M&D—(141) ADDITION (1902) with orig. M&D milestone of 1767
WA-VI-038
5/31/81 not found
VA&C 10/9/81
M&D—(140) MISSING ADDITION (1902) with ORIG M&D crownstone of 1767
WA-VI-037
M&D—(139) ADDITION (1902) with ORIG M&D MILESTONE of 1767
WA-VI-036
5/31/81
UTM: 17.73013.440020
M&D—(138) ADDITION (1902) with M&D
A&C 5/31/81
WA-VI-035
UTM: 17.73213.440026
M&D—(137): MOUND OF STONES (1767) + ADDITION OF ORIG. CROWNSTONE (1767) FROM VICINITY OF CLEAR SPRING
WA-VI-034
A&C 5/31/81
UTM: 17.73300.440030
M&D 132 (136): ORIG (1767)
WA-VI-033
A&C 5/30/81 with Isaac Norris
UTM: 17.73365.440031
M&D 131 (135): ORIG (1767)
A&C 10/3/81
WA-VI-032
UTM: 17.73522.440036
final version of US 40 realignment over Sideling Hill as marked by Robert G. Lawson, Chief, Cartographic Section, Bur. of Highway Statistics, SHA-DOT, Brooklandville, MD 11/19/82 (contract to be let ± 12/82)
MANN
UNION
BETHEL
TOWNSHIP
BEDFORD CO
FULTON CO
PENNSYLVANIA
MARYLAND
FULTON CO
WASHINGTON CO
ALLEGANY CO
Barnes Gap
Harmonia Sch
Buck Valley Ch
St Pauls Ch
Bellegrove
Piney Plains Ch
Forest Park
Munson
Crooked Run
Creek
NATIONAL PIKE
RATTLE SNAKE HILL
ISAAC NORRIS
DANIEL NORRIS (SON OF ISAAC)
POWELL HILL ROAD
HIGH GERMANY RD
MANN RD
HANNS CUT OFF RD
HARVEY
LOTHELAN
WARFORDSBURG (JUNC. U.S. 522) 10 MI
BUCK VALLEY 4 MI
WARFORDSBURG 5.6 MI
BUCK VALLEY 1.3 MI
PINEY GROVE (JUNC. U.S. 40) 7 MI
CUMBERLAND 26 MI
FLINTSTONE 12 MI
78°22'30"
78°15'
39°45'
42'30"
17'30"
20'
1 830 000 FEET (PA.)
2 350 000 FEET (W. VA.)
440 000 FEET (MD.)
700 000 FEET (MD.)
150 000 FEET (PA.)
4402000m N.
726000m E.

(MGS) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS:

ALICE MARTIN COPY

ALLEGANY CO (22)

~~(144)~~ — (152)

USC&GS TRIANGULATION STATION, RAGGED (1941)

UTM: 17. 71480. 439975

✓ M&D — (152): ADDITION (1902) WITH ORIG. M&D CROWNSTONE OF 1767, IN LARGE M&D MOUND OF STONES (1766)
A&C 9/20/81
AL-IA-073

✓ M&D — (151): ADDITION (1902) WITH NEW STONE MON
A&C 7/23/81
AL-IA-072
UTM: 17.71642.439980

✓ M&D — (150): ADDITION (1902) WITH NEW STONE MON.
A&C 9/20/81
AL-IA-071
UTM: 17. 71838.439986

✓ M&D — (149): ADDITION (1902) WITH NEW STONE MON.
A&C 9/20/81
AL-IA-070
UTM: 17.71943.439989

✓ M&D — (148): ADDITION (1902) WITH ORIG. M&D MILESTONE OF 1767
A&C 9/19/81
AL-IA-069
UTM: 17.7204[illegible].439997

✓ M&D — (147) ADDITION (1902) WITH ORIG. M&D MILESTONE (1767)
A&C 9/19/81
AL-IA-068
UTM: 17.72172.439993

✓ M&D — (146): ADDITION (1902) WITH ORIG. M&D MILESTONE OF 1767
A&C 6/1/81
AL-IA-067
UTM: 17. 72231.439994

✓ M&D — (145) ADDITION (1902) WITH ORIG. M&D MILESTONE OF 1767
A&C 9/19/81
AL-IA-066
UTM: 17. 72365.439997

✓ M&D — (144) ADDITION (1902) IN LARGE EARTH MOUND OF STONES, ORIG. M&D CROWNSTONE OF 1767
A&C 9/19/81
[illegible] PENN (1941) TRIANGULATION STATION
AL-IA-065
UTM: 17. 72444. 440002

Just barely OK for auto

better to use 4-wheel drive vehicle (take chain saw for clearing fallen trees)

(see for 153) B F. CARLILES

M&D — (167) NEW STONE MON. ADDITION (1902) TO LARGE M&D MOUND OF STONES (1767)
A&C 10/17/81
AL-IIIC-162
UTM: 17.69345.439923

M&D — (166) NEW STONE MON. ADDITION (1902)
AL-IIIC-161
A&C 8/2/81
UTM: 17.69520.439927

M&D — (165) INCORRECTLY LOCATED ON QUAD — NEW STONE MON. ADDITION (1902) TO SMALL (M&D?) MOUND OF STONES
AL-IIIC-042
UTM: 17.69657.439930
A&C 8/2/81

M&D — (164) NEW STONE MON. ADDITION (1902)
AL-IIIC-160
UTM: 17.69776.439933
A&C 10/4/81

M&D — (163) NEW STONE MON. ADDITION (1902) TO SMALL MOUND OF STONES
AL-III C-159
A&C 10/4/81 (Thurston Griggs hike)
UTM: 17.69922.439936

(MGS) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS:

ALICE MARTIN COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

EVITTS CREEK QUADRANGLE

MARYLAND-PENNSYLVANIA-WEST VIRGINIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 FLINTSTONE 15' QUADRANGLE

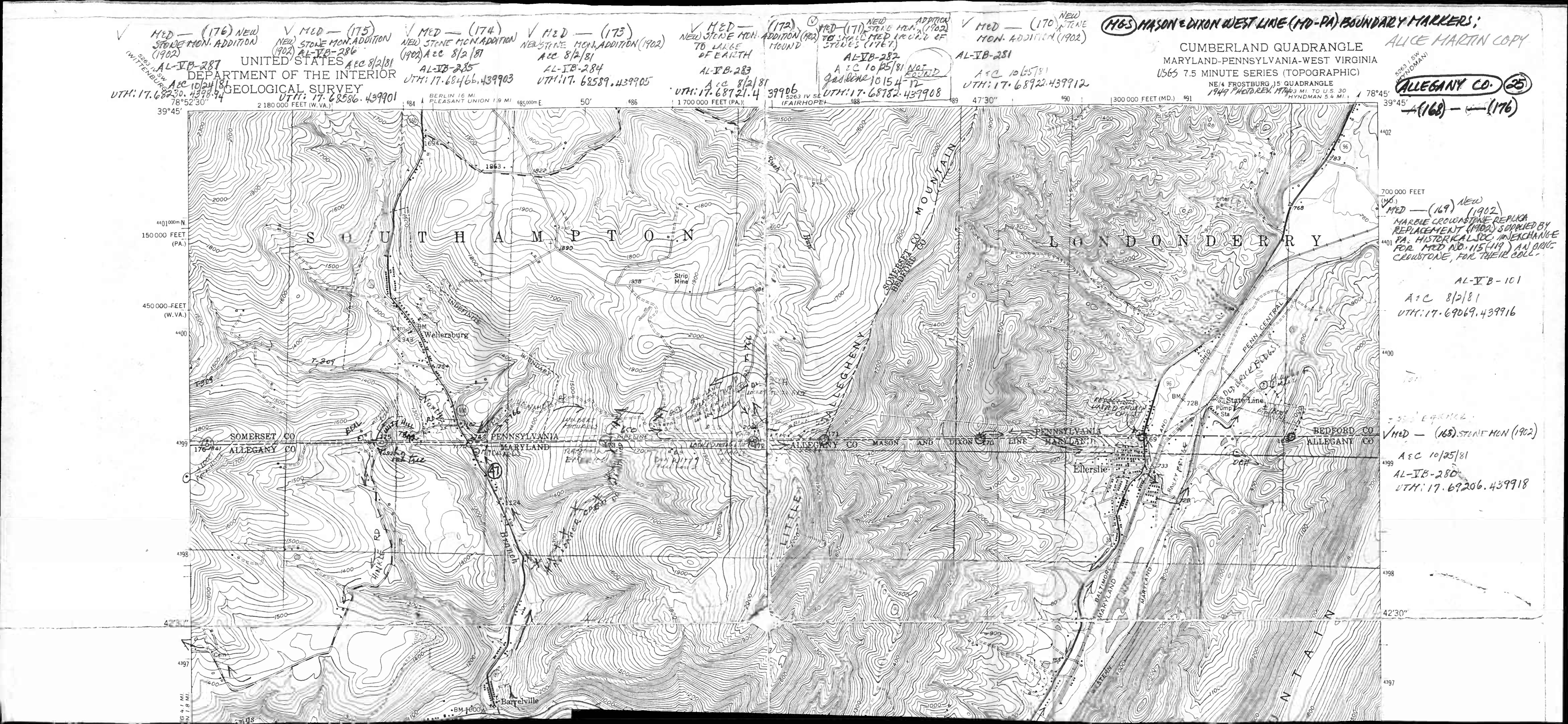
ALLEGANY CO. (24)
(161) ---- (167)

Garry Zurr
Park Ranger
777-2138
Rocky Gap State Park
+ Charles Morgan

M&D — (162) NEW STONE MON. ADDITION (1902) TO LARGE MOUND OF STONES
USC&GS PENNEL (1927)
AL-IIIC-158
A&C 10/5/81
UTM: 17.70066.439938

M&D — (161) NEW STONE MON. ADDITION (1902)
UTM: 17.70280.439945
AL-IIIC-157
A&C 7/23/81
(Thurston Griggs hike)

W. T. REIKE


MGS MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS;
ALICE MARTIN COPY
ALLEGANY CO. 25
(168) — (176)
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CUMBERLAND QUADRANGLE
MARYLAND-PENNSYLVANIA-WEST VIRGINIA
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 FROSTBURG 15' QUADRANGLE
1949 PHOTOREV. 1974
MED — (176) NEW STONE MON. ADDITION (1902)
AL-VB-287
A&C 10/24/81
UTM: 17.68230.439894
MED — (175) NEW STONE MON. ADDITION (1902)
AL-VB-286
A&C 8/2/81
UTM: 17.68586.439901
MED — (174) NEW STONE MON. ADDITION (1902)
A&C 8/2/81
AL-VB-285
UTM: 17.68466.439903
MED — (173) NEW STONE MON. ADDITION (1902)
A&C 8/2/81
AL-VB-284
UTM: 17.68589.439905
MED — (172) NEW STONE MON. ADDITION (1902) TO LARGE MOUND OF EARTH
AL-VB-283
A&C 8/2/81
UTM: 17.68721.439906
MED — (171) NEW STONE MON. ADDITION (1902) TO SMALL MED MOUND OF STONES (1767)
AL-VB-282
A&C 10/25/81 NOT FOUND
gasline 10154-12
UTM: 17.68782.439908
MED — (170) NEW STONE MON. ADDITION (1902)
AL-VB-281
A&C 10/25/81
UTM: 17.68922.439912
MED — (169) NEW (1902)
MARBLE CROWNSTONE REPLICA REPLACEMENT (1902) SUPPLIED BY PA. HISTORICAL SOC. IN EXCHANGE FOR MED NO. 115 (119) AN ORIG. CROWNSTONE, FOR THEIR COLL.
AL-VB-101
A&C 8/2/81
UTM: 17.69069.439916
MED — (168) STONE MON (1902)
A&C 10/25/81
AL-VB-280
UTM: 17.69206.439918
SOUTHAMPTON
LONDONDERRY
SOMERSET CO
ALLEGANY CO
BEDFORD CO
PENNSYLVANIA
MARYLAND
MASON AND DIXON LINE
ALLEGHENY MOUNTAIN
LITTLE ALLEGHENY
Wellersburg
Ellerslie
State Line
Barrelville
Strip Mine
PENN CENTRAL
BALTIMORE AND OHIO

(1765) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MARYLAND
MARYLAND GEOLOGICAL SURVEY

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY

FROSTBURG QUADRANGLE

MARYLAND–PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 FROSTBURG 15' QUADRANGLE

1949 PHOTOREV 1974

✓ M&D – (185) ADDITION (1902) OF NEW STONE MON. A&C 10/12/81 G-IB-183. UTM: 17.67189. 437868

✓ M&D – (184) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF STONES G-IB-182 A&C 10/12/81 UTM: 17.67332.439873

✓ M&D – (183) ADDITION (1902) OF NEW STONE MON. TO LARGE OLD MOUND OF EARTH MARKING M&D 169TH MILE G-IB-181 A&C 10/12/81 UTM: 17.67374.439873

M&D – (182) ADDITION (1902) OF NEW STONE MON. TO OLD MOUND OF EARTH MARKING M&D 168TH MILE A&C 10/12/81 G-IB-180 UTM: 17.67540.439877

✓ M&D – (181) ADDITION (1902) OF NEW STONE MON. TO MOUND OF EARTH, MARKING M&D 167TH MILE G-IB-179 A&C 10/18/81 UTM: 17.67709.439882

✓ M&D – (180) ADDITION (1902) OF NEW STONE MON. A&C 10/18/81 G-IB-178 UTM: 17.67790.439883

✓ M&D – (179) ADDITION (1902) NEW STONE MON. TO MOUND OF EARTH APPROX. MARKING M&D 166TH MILE A&C 10/18/81 G-IB-177 UTM: 17.67870.439885

--(177)--(178) (26)
ALLEGANY CO
GARRETT CO
--(179)-- --(185)

✓ M&D – (178) ADDITION: SMALL STONE POST (MARKING POINT ON BAUER LINE WHERE ALLEGANY-GARRETT CO. BOUNDARY INTERSECTS M&D WEST LINE) (1898)
AL-VA-289
A&C 10/18/81
UTM: 17.67878.439885
NOTE: ALSO NO. 1 (OF 26) MONUMENTS, NUMBERED N TO S MARKING BAUER LINE

NEW PIPELINE #1612-6
COLUMBIA GAS MT. SAVAGE PUMPING STATION

✓ M&D – (177) ADDITION, NEW STONE MON. (1902)
AL-VA-288
A&C 10/24/81
UTM: 17.68045 439888

ALICE MARTIN'S WORKING COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MARYLAND
MARYLAND GEOLOGICAL SURVEY

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY

AVILTON QUADRANGLE
MARYLAND-PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

(M65) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS:
---(186)---(194)

GARRETT CO 27

M&D—(195) ADDITION (1902) OF STONE MON. TO MOUND OF STONES MARKING M&D 1st MILE

M&D—(194) ADDITION (1902) OF NEW STONE MON.
A&C 10/11/81
G-IA-192
UTM: 17.66195.439541

M&D—(193) ADDITION (1902) OF NEW STONE MON. TO SMALL MOUND OF EARTH & STONES
A&C 10/11/81
G-IA-191

M&D—(192) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH
A&C 10/11/81
UTM: 17.66322.439844

M&D—(191) ADDITION (1902) OF NEW STONE MON.
G-IA-189
A&C 10/11/81
UTM: 17.66473.439850

M&D—(190) ADDITION (1902) OF NEW STONE MON. TO SMALL MOUND OF EARTH MARKING M&D 174th MILE
A&C 10/11/81
G-IA-188
UTM: 17.66586.439853

M&D—(189) ADDITION (1902) OF NEW MON. TO LARGE MED. MOUND OF EARTH
G-IA-187
A&C 10/11/81
UTM: 17.66653.439855

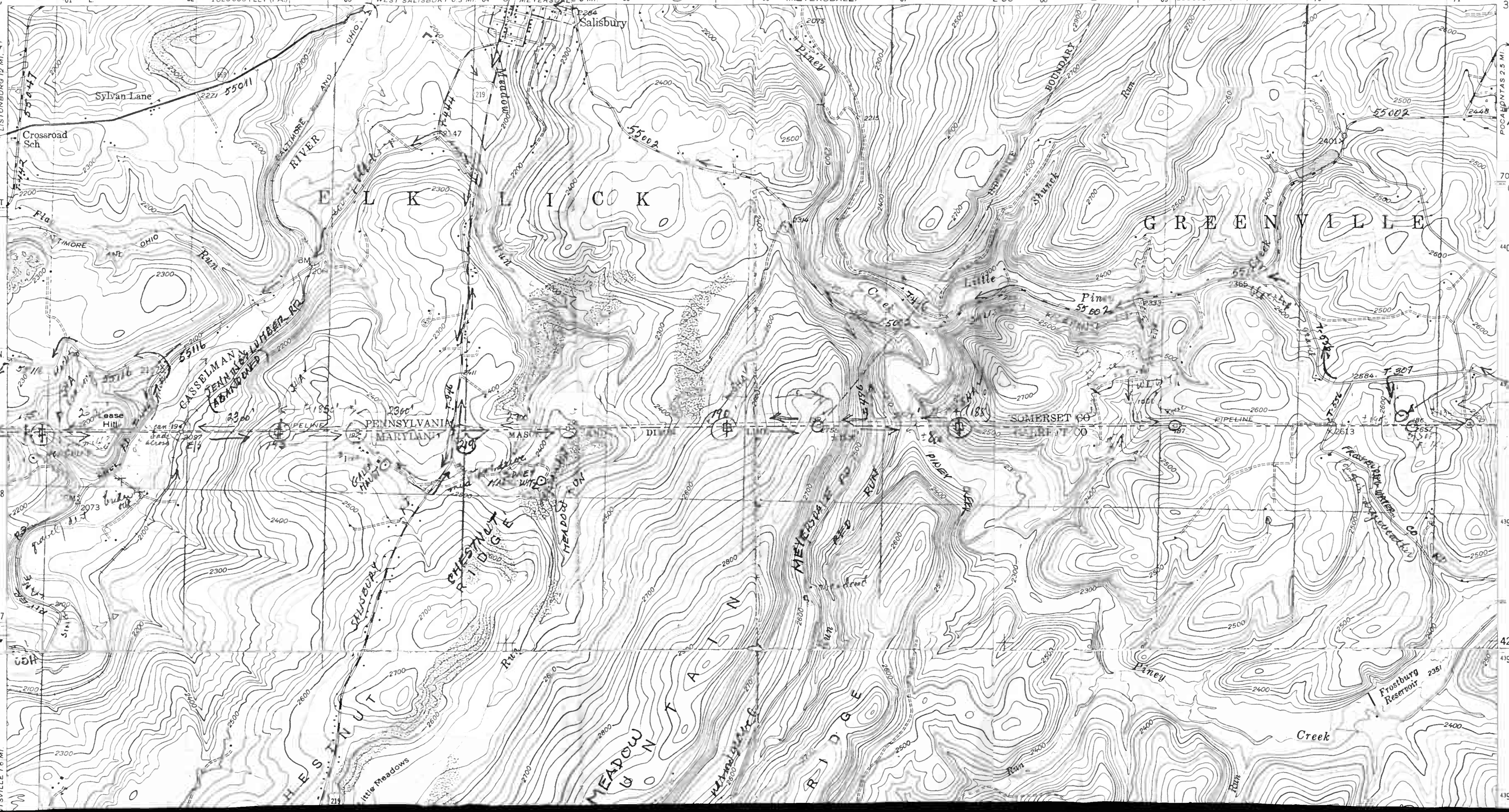
M&D—(188) ADDITION (1902) OF NEW STONE MON. TO SMALL MOUND OF STONES MARKING M&D 173rd MILE
G-IB-186
A&C 10/12/81
UTM: 17.66754.439856

1947 PHOTOREV. 1974

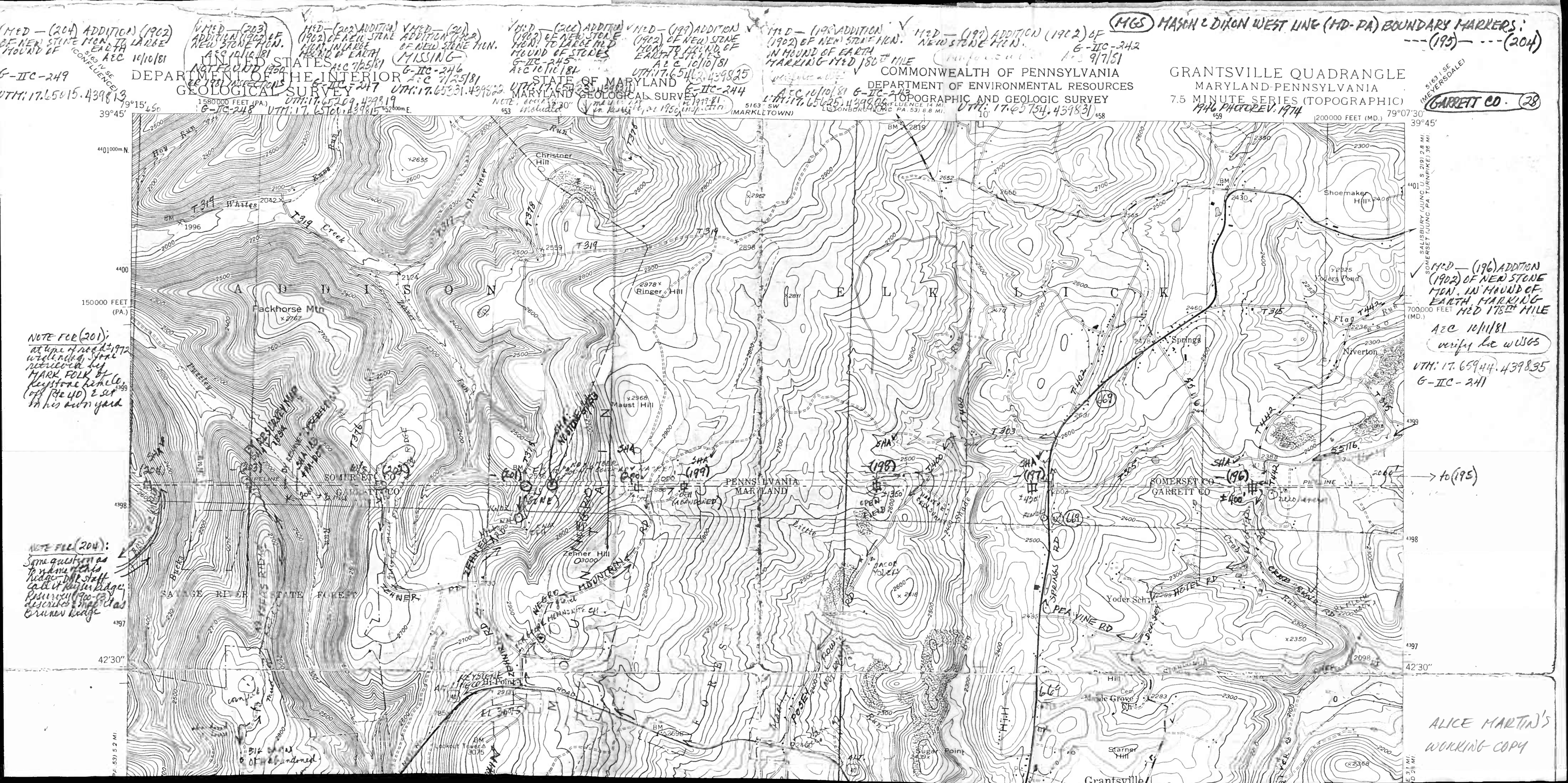
A&C 10/11/81
UTM: 17.66094.439839
G-IA-193

M&D—(187) ADDITION (1902) OF NEW STONE MON. TO SMALL MOUND OF EARTH MARKING APPROX. M&D 172nd MILE
A&C 10/12/81
UTM: 17.66910.439860
G-IB-185

M&D—(186) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH
A&C 10/12/81
UTM: 17.67084.439863
G-IB-184



ALICE MARTIN'S WORKING COPY



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF MARYLAND
MARYLAND GEOLOGICAL SURVEY
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY
GRANTSVILLE QUADRANGLE
MARYLAND-PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
1946 PHOTOREV. 1974
GARRETT CO. 28
MGS MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: ---(195)--- ---(204)
M&D — (204) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH A&C 10/10/81 G-IIC-249 UTM: 17.65015.439813
M&D — (203) ADDITION (1902) OF NEW STONE MON. A&C 10/10/81 NOT FOUND 1950 OR 1981 INSPECTIONS G-IIC-248 UTM: 17.65100.439815
M&D — (202) ADDITION (1902) OF NEW STONE MON. IN LARGE MOUND OF EARTH A&C 7/25/81 G-IIC-247 UTM: 17.65209.439819
M&D — (201) ADDITION (1902) OF NEW STONE MON. MISSING G-IIC-246 A&C 7/25/81 UTM: 17.65331.439822
M&D — (200) ADDITION (1902) OF NEW STONE MON. TO LARGE M&D MOUND OF STONES G-IIC-245 A&C 10/10/81
M&D — (199) ADDITION (1902) OF NEW STONE MON. TO MOUND OF EARTH & STONES A&C 10/10/81 UTM: 17.65462.439825 G-IIC-244
M&D — (198) ADDITION (1902) OF NEW STONE MON. IN MOUND OF EARTH MARKING M&D 180th MILE A&C 10/10/81 G-IIC-243 UTM: 17.65625.439828
M&D — (197) ADDITION (1902) OF NEW STONE MON. G-IIC-242 9/7/81 UTM: 17.65754.439831
M&D — (196) ADDITION (1902) OF NEW STONE MON. IN MOUND OF EARTH MARKING M&D 178th MILE A&C 10/11/81 verify loc w USGS UTM: 17.65944.439835 G-IIC-241
NOTE FOR (201): at time of road ± 1972 widening, stone retrieved by MARK FOLK of Keystone Lime Co. (off Rte 40) & set in his own yard
NOTE FOR (204): Some question as to name of this ridge — DNR staff call it Keyser Ridge; Resurvey (1900-03) describes it as Bruner Ridge
ALICE MARTIN'S WORKING COPY
A D D I S O N
E L K L I C K
SOMERSET CO.
GARRETT CO.
PENNSYLVANIA
MARYLAND
SAVAGE RIVER STATE FOREST
Packhorse Mtn
Christner Hill
Ringer Hill
Maust Hill
Zehner Hill
Shoemaker Hill
Springs
Niverton
Yoder Sch
Maple Grove Ch
Starner Hill
Sugar Point
Hi-Point
Grantsville
→ to (195)

(MGS) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: ---(205)--- ---(213)

GARRETT CO. (39)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MARYLAND
MARYLAND GEOLOGICAL SURVEY

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY

ACCIDENT QUADRANGLE
MARYLAND–PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

USGS 1948 PHOTOREV. 1974

M&D — (213) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH A&C 9/6/81 G-IIB-258

M&D — (212) ADDITION (1902) OF NEW STONE MON. A&C 7/25/81 G-IIB-257 UTM: 17.6…

M&D — (211) ADDITION (1902) OF NEW STONE MON. A&C 7/25/81 G-IIB-256 UTM: 17.64185.439793

M&D — (210) ADDITION (1902) OF NEW STONE MON. TO SMALL MOUND OF EARTH & STONES MARKING M&D 78 TH MILE A&C 9/6/81 G-IIB-255

M&D — (209) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH & STONES A&C 9/6/81 G-IIB-254

M&D — (208) SMALL MOUND OF STONES ONLY (date?) A&C 9/6/81 G-IIB-253

M&D — (207) ADDITION (1902) OF NEW STONE MON. A&C 7/25/80 G-IIB-252 UTM: 17.64572.439803

M&D — (206) ADDITION (1902) OF STONE MON. A&C 7/25/81 G-IIB-251 UTM: 17.64676.439806

M&D — (205) ADDITION (1902) OF NEW STONE MON. ON SITE OF FORMER LARGE MOUND OF EARTH A&C 7/25/81 G-IIB-250 UTM: 17.64880.439810

ALICE MARTIN'S WORKING COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MARYLAND
MARYLAND GEOLOGICAL SURVEY

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
TOPOGRAPHIC AND GEOLOGIC SURVEY

FRIENDSVILLE QUADRANGLE
MARYLAND-PENNSYLVANIA-
WEST VIRGINIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

(MGS) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: ---(214) - --(222) + 34

GARRETT CO. (30)

V — (34) ADDITION (1911) NEW CONCRETE MON. (SITE 1910)
A&C 9/5/81
UTM: 17.63353.437769

V MCD — (222) ADDITION (1915)
9/5/81
UTM: 17.63031.439749

V MCD — (221) ADDITION (1902) NEW STONE MON.
A&C 9/5/80
UTM: 17.63195.439772

V MCD — (220) ADDITION (1902) OF NEW STONE MON.
A&C 9/5/81
G-IIA-265
UTM: 17.63344.439774

V MCD — (219) SMALL MOUND OF STONES ONLY, BELIEVED MARKING MCD 197TH MILE
UTM: 17.63370.439775

V MCD — (218) ADDITION (1902) OF NEW STONE MON.
A&C 9/7/81
G-IIA-263
UTM: 17.63494.439776

V MCD — (217) SMALL MOUND OF STONES ONLY, MARKING MCD 193RD MILE
A&C 9/5/81
G-IIA-262
UTM: 17.63534.439778

old stone spring house

V MCD — (216) ADDITION (1902) OF NEW STONE MON.
A&C 9/7/81
G-IIA-261
UTM: 17.63694.439780

V MCD — (215): ADDITION (1902) OF NEW STONE MON. SITE INUNDATED BY YOUGHIOGHENY RIVER IMPOUNDMENT (STONE REMOVED) BUT NOT SET ELSEWHERE ON THE LINE)
A&C 7/25/81
G-IIA-260
UTM: 17.63782.439783

V MCD — (214) ADDITION (1902) OF NEW STONE MON. TO LARGE MOUND OF EARTH
A&C 7/25/81
G-IIA-259
UTM: 17.63862.439785

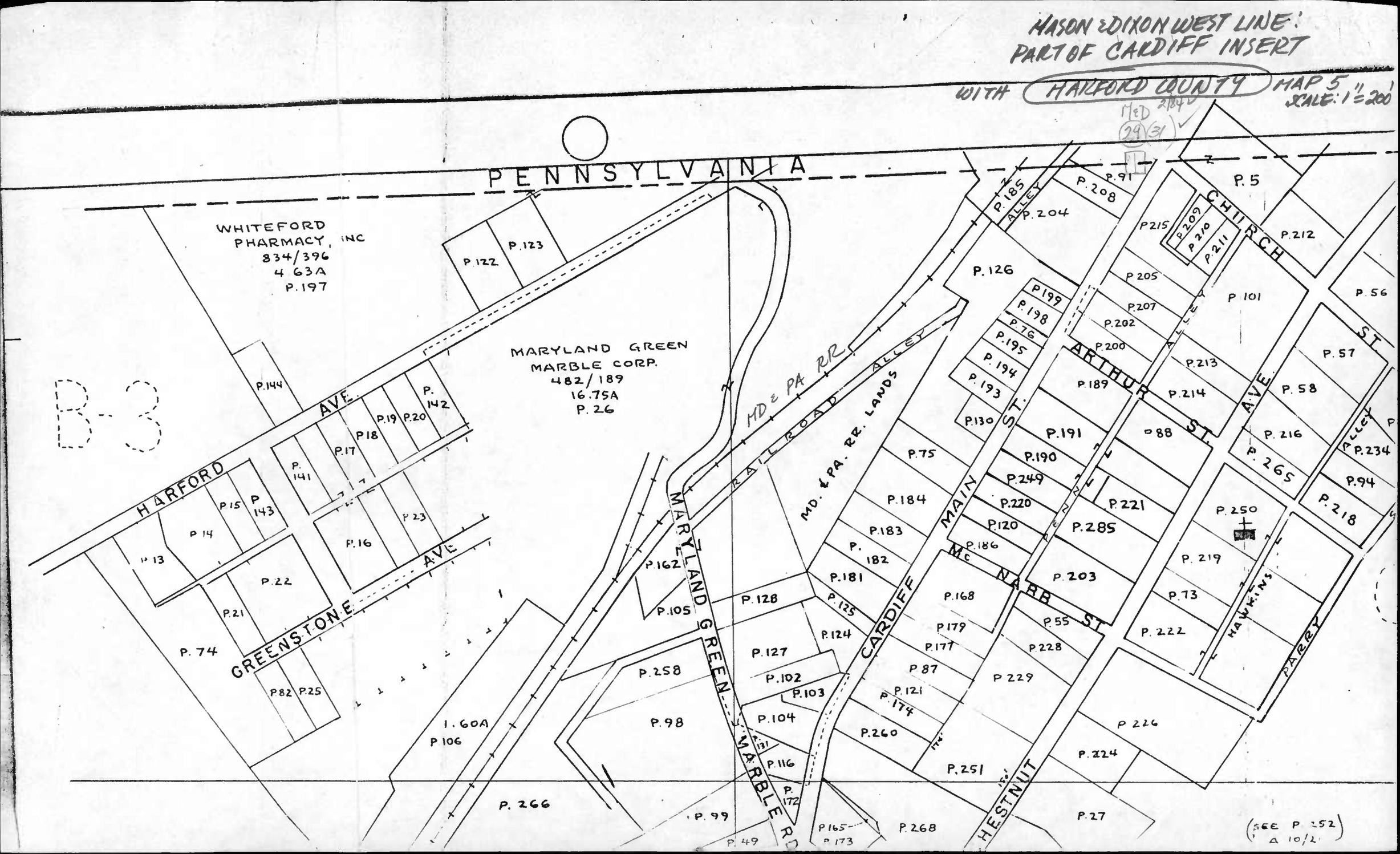
NEW PIPELINE NOT MARKED (INSTALLED 5 YEARS AGO, I.E. ± 1985??)

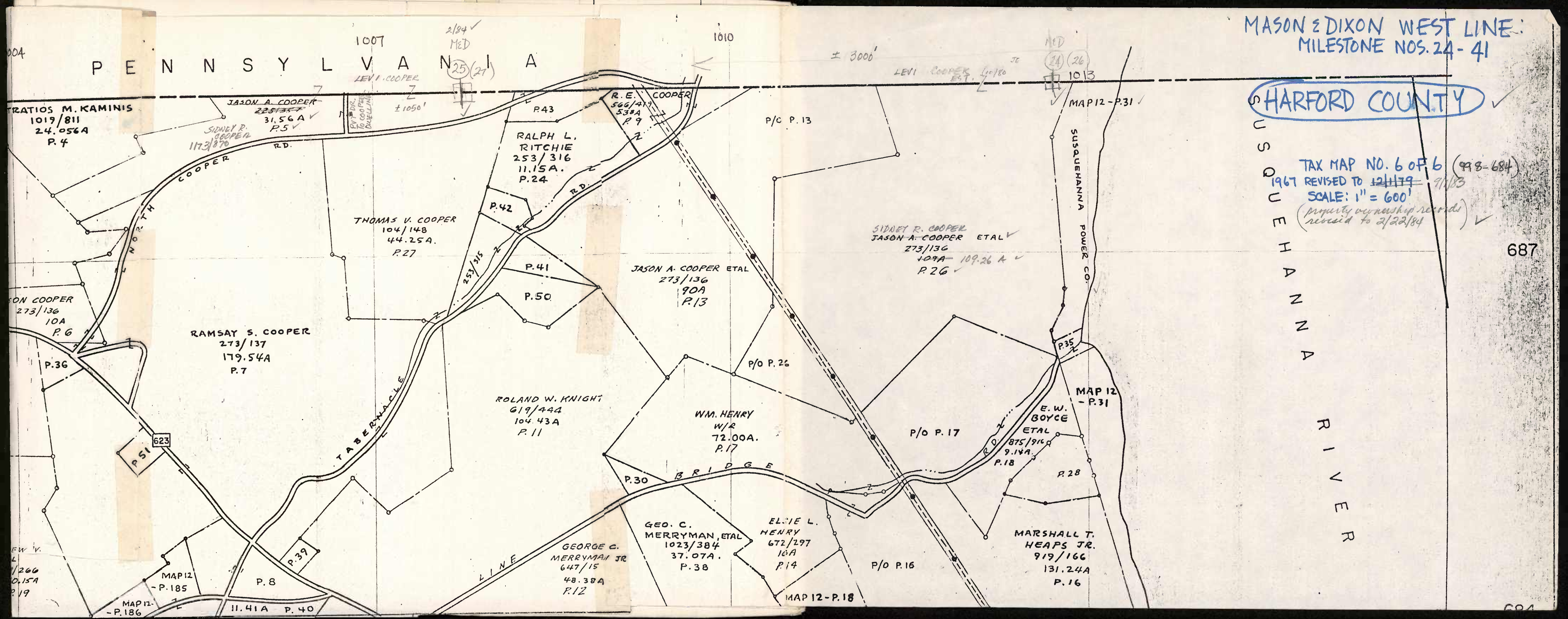
CONCRETE MON (1911)
A&C 9/5/81

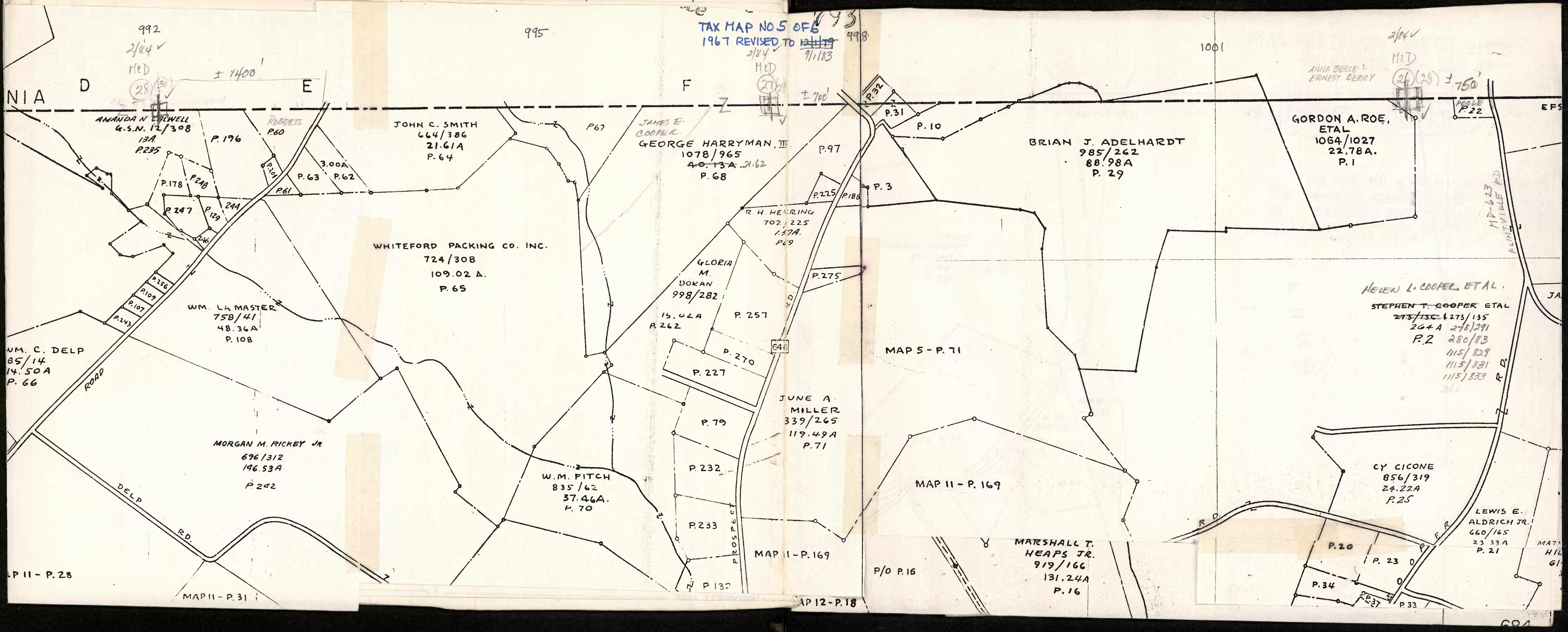
ALICE MARTIN'S WORKING COPY

MASON & DIXON WEST LINE!
PART OF CARDIFF INSERT

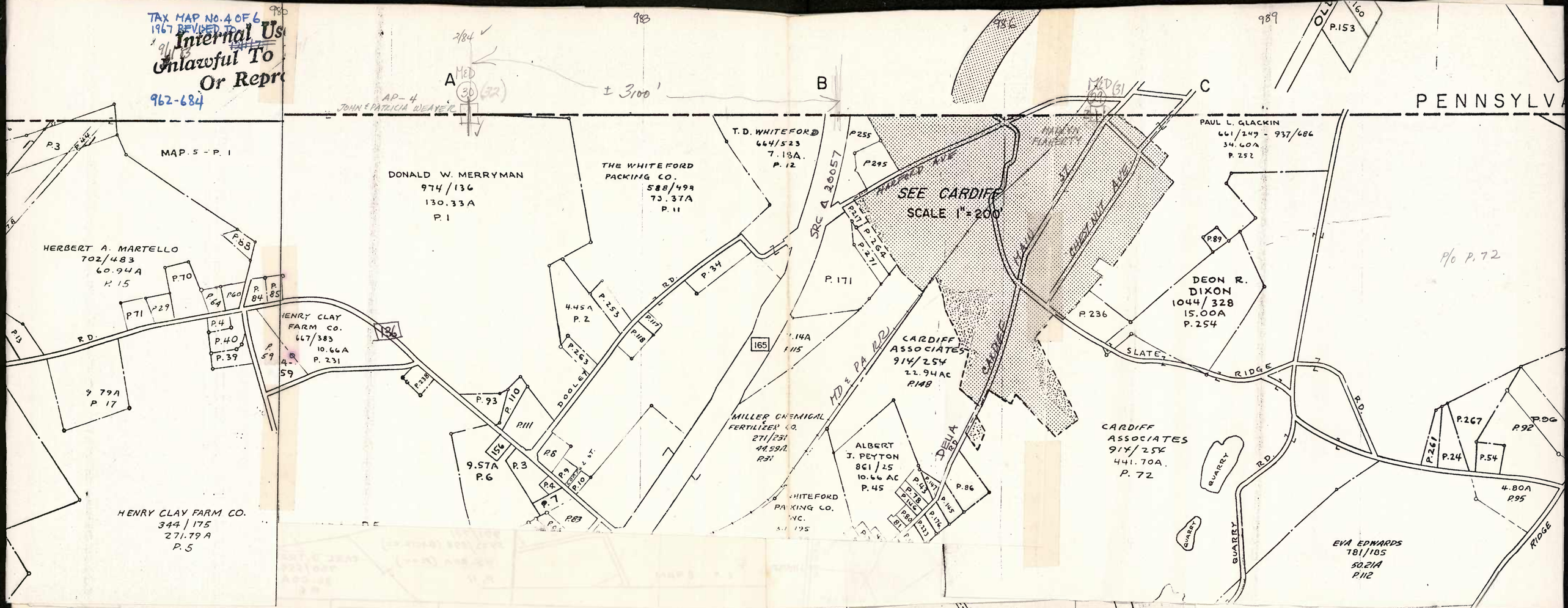
WITH HARFORD COUNTY MAP 5
SCALE: 1" = 200'

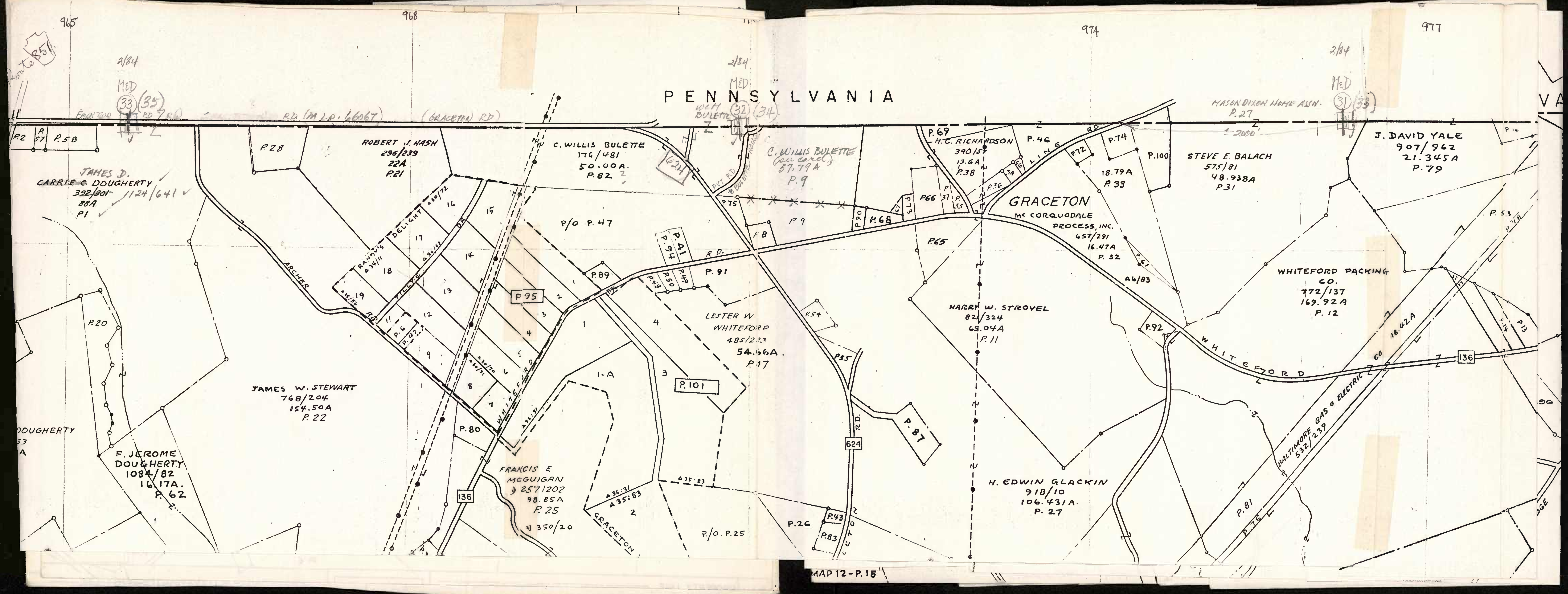


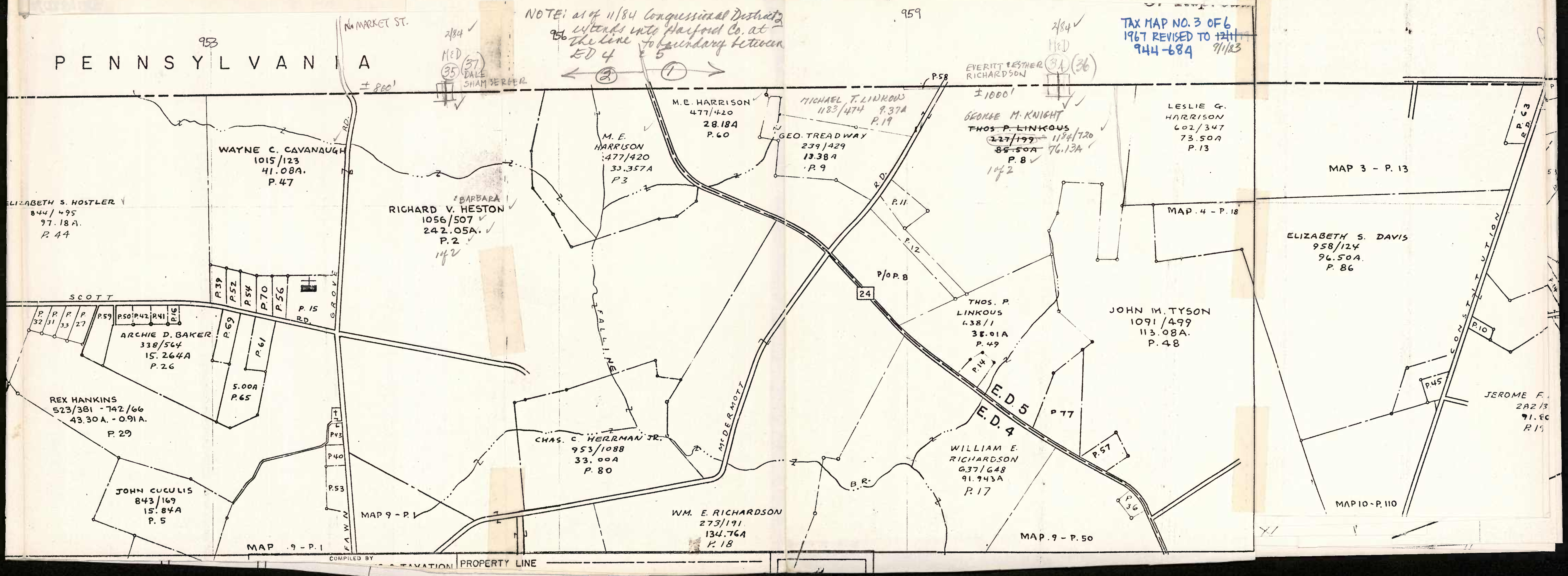

MASON & DIXON WEST LINE:
MILESTONE NOS. 24-41
HARFORD COUNTY
TAX MAP NO. 6 OF 6 (998-684)
1967 REVISED TO 12/1/79 9/1/83
SCALE: 1" = 600'
(property ownership records revised to 2/22/84)
687
PENNSYLVANIA
SUSQUEHANNA RIVER
1007
1010
1013
± 3000'
± 1050'
LEVI COOPER
JASON A. COOPER
31.56 A
P.5
SIDNEY R. COOPER 1173/870
STRATIOS M. KAMINIS
1019/811
24.056A
P.4
NORTH COOPER RD.
R.E. COOPER
566/419
53.8A
P.9
P.43
RALPH L. RITCHIE
253/316
11.15A.
P.24
P/O P.13
MAP 12-P.31
SUSQUEHANNA POWER CO.
P.42
THOMAS V. COOPER
104/148
44.25A.
P.27
SIDNEY R. COOPER
JASON A. COOPER ETAL
273/136
109.26 A
P.26
JASON A. COOPER ETAL
273/136
90A
P.13
P.41
P.50
JASON COOPER
273/136
10A
P.6
RAMSAY S. COOPER
273/137
179.54A
P.7
P.36
P/O P.26
P.35
MAP 12 - P.31
ROLAND W. KNIGHT
619/444
104.43A
P.11
WM. HENRY
W/R
72.00A.
P.17
P/O P.17
E.W. BOYCE ETAL
875/916
9.14A.
P.18
P.28
P.51
623
TABERNACLE
BRIDGE
P.30
GEO. C. MERRYMAN, ETAL
1023/384
37.07A.
P.38
ELSIE L. HENRY
672/297
16A
P.14
P/O P.16
MARSHALL T. HEAPS JR.
919/166
131.24A
P.16
GEORGE C. MERRYMAN JR
647/15
48.38A
P.12
LINE
P.39
P.8
MAP 12 - P.185
MAP 12 - P.186
11.41A
P.40
MAP 12 - P.18



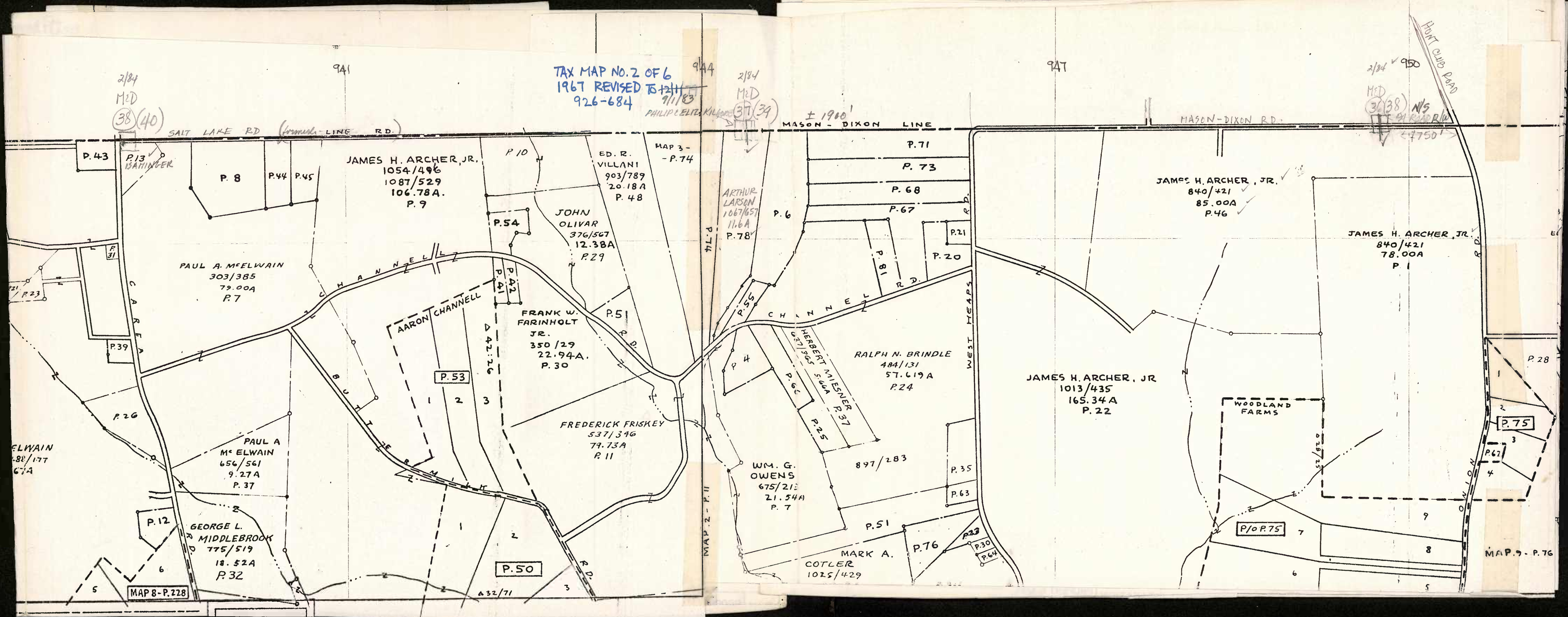
TAX MAP NO 5 OF 6
1967 REVISED TO 9/1/83
992
995
998
1001
D
E
F
± 1400'
± 700'
± 750'
AMANDA N CALWELL
G.S.N. 12/308
13A.
P.235
P.196
ROBERTS
P.60
JOHN C. SMITH
664/386
21.61A
P.64
P.67
JAMES E. COOPER
GEORGE HARRYMAN, III
1078/965
40.13A 21.62
P.68
P.97
P.178
P.248
P.247
P.129
244
P.201
P.63
3.00A
P.62
P.61
P.225
P.186
P.3
R.H. HERRING
702/225
1.57A
P.69
WHITEFORD PACKING CO. INC.
724/308
109.02 A.
P.65
GLORIA M. DORAN
998/282
15.02A
P.262
P.257
P.275
P.256
P.109
P.107
P.243
WM. LA MASTER
758/41
48.36A
P.108
WM. C. DELP
85/14
14.50A
P.66
ROAD
P.270
P.227
646
RD.
MAP 5 - P.71
JUNE A. MILLER
339/265
119.49A
P.71
P.79
MORGAN M. RICKEY JR
696/312
196.53A
P.242
P.232
W.M. FITCH
835/62
37.46A.
P.70
MAP 11 - P.169
DELP
RD.
P.233
PROSPECT
MAP 11 - P.169
P.130
MAP 11 - P.28
MAP 11 - P.31
MAP 12 - P.18
P/O P.16
MARSHALL T. HEAPS JR.
919/166
131.24A
P.16
P.32
P.31
P.10
BRIAN J. ADELHARDT
985/262
88.98A
P.29
ANNA BELLE & ERNEST BERRY
GORDON A. ROE, ETAL
1064/1027
22.78A.
P.1
PEDGE
P.22
EFS
MD-623
FLINTVILLE RD
HELEN L. COOPER ETAL
STEPHEN T. COOPER ETAL
273/135
264A
278/291
P.2
280/83
1115/829
1115/831
1115/833
RD.
CY CICONE
856/319
24.22A
P.25
LEWIS E. ALDRICH JR.
660/165
23.33A
P.21
P.20
P.23
P.34
P.37
P.33
RD.



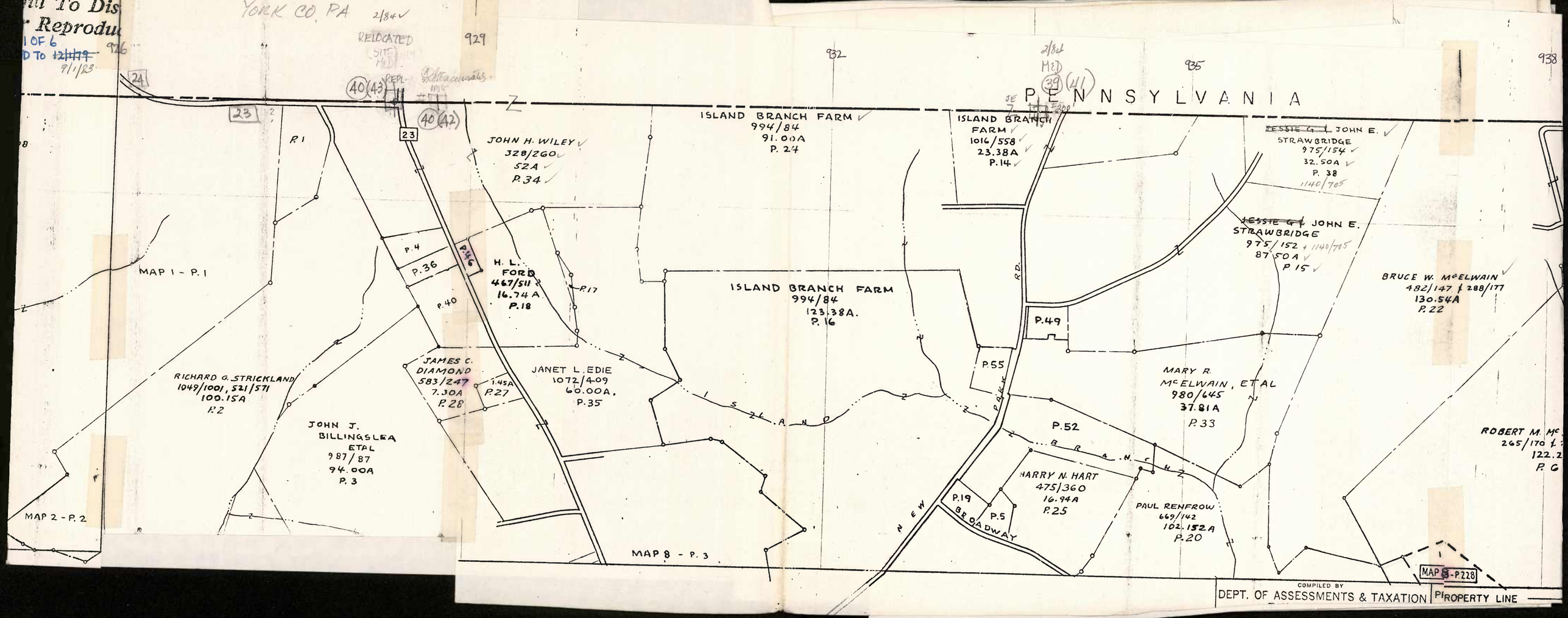

965
968
974
977
PENNSYLVANIA
Route 851
2/84
MeD 33 (35)
MeD 32 (34)
MeD 31 (33)
RD (PA) L.R. 66067
(GRACETON RD)
W&H BULETTE
MASON DIXON HOME ASSN. P.27
P.2
P.57
P.5B
P.28
ROBERT J. HASH 296/239 22A P.21
C. WILLIS BULETTE 176/481 50.00A. P.82
624
C. WILLIS BULETTE (see card) 57.79A P.9
P.69
H.C. RICHARDSON 390/57 13.6A P.38
P.46
LINE RD
P.72
P.74
P.100
STEVE E. BALACH 575/81 48.938A P.31
J. DAVID YALE 907/962 21.345A P.79
JAMES D. CARRIE C. DOUGHERTY 392/301 88A. P1
124/641
P.75
P.66
P.73
P.90
P.68
P.36
GRACETON
McCORQUODALE PROCESS, INC. 657/291 16.47A P.32
18.79A P.33
P/O P.47
RANDY'S DELIGHT
DR.
P.41
P.94
RD.
P.65
P.61
P.53
ARCHER
TILLYE
P.89
P.91
P.49
P.50
P.48
WHITEFORD PACKING CO. 772/137 169.92A P.12
P.95
LESTER W WHITEFORD 485/223 54.66A P.17
P.54
HARRY W. STROVEL 821/324 68.04A P.11
P.92
WHITEFORD RD
18.42A
136
P.20
P.42
P.6
P.55
1-A
P.101
JAMES W. STEWART 768/204 154.50A P.22
P.87
624
BALTIMORE GAS & ELECTRIC CO 532/239
DOUGHERTY
P.80
WHITEFORD RD.
F. JEROME DOUGHERTY 1084/82 16.17A. P.62
FRANCIS E MCGUIGAN 257/202 98.85A P.25 350/20
136
H. EDWIN GLACKIN 918/10 106.431A. P.27
GRACETON
P.26
P.43
P.83
P/O P.25
P.81
P.75
MAP 12-P.18



TAX MAP NO. 3 OF 6
1967 REVISED TO 9/1/83
944-684
NOTE: as of 11/84 Congressional District 2 extends into Harford Co. at the line for boundary between ED 4 & 5
PENNSYLVANIA
953
956
959
No MARKET ST.
DALE SHAMBERGER
± 860'
EVERITT & ESTHER RICHARDSON
± 1000'
WAYNE C. CAVANAUGH
1015/123
41.08A.
P. 47
ELIZABETH S. HOSTLER
844/495
97.18A.
P. 44
RICHARD V. HESTON
1056/507
242.05A.
P. 2
M. E. HARRISON
477/420
33.357A
P. 3
M.E. HARRISON
477/420
28.18A
P. 60
MICHAEL T. LINKOUS
1183/474
9.37A
P. 19
GEO. TREADWAY
239/429
13.38A
P. 9
GEORGE M. KNIGHT
THOS. P. LINKOUS
1184/720
76.13A
P. 8
LESLIE G. HARRISON
602/347
73.50A
P. 13
MAP 3 - P. 13
MAP. 4 - P. 18
ELIZABETH S. DAVIS
958/124
96.50A.
P. 86
SCOTT RD.
GROVE
ARCHIE D. BAKER
338/564
15.264A
P. 26
REX HANKINS
523/381 - 742/66
43.30 A. - 0.91 A.
P. 29
JOHN CUCULIS
843/169
15.84A
P. 5
FALL LINE
CHAS. C. HERRMAN JR.
953/1088
33.00A
P. 80
McDERMOTT
WM. E. RICHARDSON
273/191
134.76A
P. 18
THOS. P. LINKOUS
638/1
38.01A
P. 49
JOHN M. TYSON
1091/499
113.08A.
P. 48
24
E.D 5
E.D. 4
WILLIAM E. RICHARDSON
637/648
91.943A
P. 17
CONSTITUTION
JEROME F.
MAP 9 - P. 1
MAP 9 - P. 50
MAP 10 - P. 110
PROPERTY LINE
COMPILED BY



TAX MAP NO. 2 OF 6
1967 REVISED TO 9/1/83
926-684
941
944
947
950
2/84 M&D 38 (40)
2/84 M&D 37 (39)
2/84 M&D 36 (38)
SALT LAKE RD (formerly LINE RD.)
MASON - DIXON LINE
± 1900'
MASON-DIXON RD.
HUNT CLUB ROAD
PHILIP & ELIZ. KILGORE
P. 43
P. 13 BAHINGER
P. 8
P. 44
P. 45
JAMES H. ARCHER, JR.
1054/496
1087/529
106.78 A.
P. 9
P. 10
ED. R. VILLANI
903/789
20.18 A
P. 48
MAP 3 - P. 74
P. 54
JOHN OLIVAR
376/567
12.38 A
P. 29
PAUL A. McELWAIN
303/385
79.00 A
P. 7
CHANNELL RD.
AARON CHANNELL
P. 42
P. 41
FRANK W. FARINHOLT JR.
350/29
22.94 A.
P. 30
P. 51
P. 31
P. 23
P. 39
CAREA
P. 53
42:26
BUTTERMILK RD.
FREDERICK FRISKEY
537/346
79.73 A
P. 11
P. 26
PAUL A McELWAIN
656/561
9.27 A
P. 37
McELWAIN 88/177
P. 12
GEORGE L. MIDDLEBROOK
775/519
18.52 A
P. 32
P. 50
MAP 8 - P. 228
32/71
ARTHUR LARSON
1067/657
11.6 A
P. 78
P. 74
P. 6
P. 71
P. 73
P. 68
P. 67
P. 21
P. 18
P. 20
P. 55
P. 4
P. 66
HERBERT MIESNER
637/565
5.66 A
P. 37
P. 25
RALPH N. BRINDLE
484/131
57.619 A
P. 24
WEST HEAPS RD.
897/283
WM. G. OWENS
675/213
21.54 A
P. 7
MAP 2 - P. 11
P. 35
P. 63
P. 51
MARK A. COTLER
1025/429
P. 76
P. 23
P. 30
P. 64
JAMES H. ARCHER, JR.
840/421
85.00 A
P. 46
JAMES H. ARCHER, JR.
840/421
78.00 A
P. 1
JAMES H. ARCHER, JR
1013/435
165.34 A
P. 22
WOODLAND FARMS
25:27
P/O P. 75
P. 28
P. 75
P. 67
UNION RD.
MAP 9 - P. 76



Inte
Onlaw
O

TAX MAP NO.
1967 REVISE
908-684

920

923 2/84

PENNSYLVANIA

MED

41 (44)

±2100'

±1500'

LEIB RD.

BALTIMORE CO.

E.D. 4

P.7

LONG

T. C. PARKINSON
834/419
121.52A.
P.9

CLAY W. SHAW
405/37, 1049/9
220.989A
P.1

ENER

RD.

HENRY W.
PIGG
449/563
80.00A
P. 5

CHEKEMECO
991/781
5423/898 (BALTO. CO)
45.00A (PLAN.)
P. 11

CARL D. TRACY
760/554
36.00A
P. 6

P.2

P.10

P.3

P.4

P.12

CO.

PROPERTY LINE

DEPT. OF ASSESSMENTS & TAXATION

PROPERTY LINE

A. Matter from Ralph Donnelly 2/4/81 → MGS file

MASON & DIXON WEST LINE;

Positions of Mason & Dixon Stones copied or computed from published data of Coast and Geodetic Survey.

REVISED JUNE 1975

Stone as Numbered on Quad Sheets		Latitude	Longitude
BALTIMORE CO.	46	39° 43' 15.8"	76° 35' 50.3"
	49	39° 43' 15.8"	76° 39' 22.7"
CARROLL CO.	53	39° 43' 15.0"	76° 43' 45.5"
	56	39° 43' 14.1"	76° 48' 24.9"
	68	39° 43' 11.8"	77° 00' 50.2"
FREDERICK CO.	78	39° 43' 11.2"	77° 12' 07.8"
	82	39° 43' 11.2"	77° 16' 39.2"
	86	39° 43' 11.3"	77° 21' 10.5"
WASHINGTON CO.	94	39° 43' 11.5"	77° 30' 12.6"
	100	39° 43' 13.5" 39°43'14.5"	77° 36' 59.4"
	106	39° 43' 15.9"*	77° 43' 45.1"
	109	39° 43' 16.6 **	77° 46' 01.6"
	110	39° 43' 16.8"**	77° 47' 09.0"
	111	39° 43' 17.4"	77° 48' 17.3"
	113	39° 43' 18.2"	77° 50' 30.5"
	115	39° 43' 19.0"	77° 52' 53.0"
ALLEGANY CO.	131	39° 43' 20.5"**	78° 10' 54.5"
	134	39° 43' 20.7"	78° 14' 13.6"
	167	39° 43' 22.4"	78° 44' 35.4"
	172	39° 43' 22.6"**	78° 48' 56.3"
GARRETT CO.	34	Va-Md. Boundary Stone (NW corner) 39° 43' 15.7"	

*1854.326 ft. from ENDS (Monument not in original Position, See 1903 notes and 1960 Recovery notes)

** Geographical Position computed from Maryland Grid Coordinates.

for MGS

TO: Joseph M. McNamara, Maryland Geological Survey, Division of Archeology, Merryman Hall, The Johns Hopkins University, Baltimore, Maryland 21218

FROM: Mrs. Alice Martin, 14308 Mount Avenue, Phoenix, Maryland 21131

RE: MGS/Division of Archeology 30.01.11.007.003.04.01, Fund 03
MASON & DIXON LINE: MARYLAND-PENNSYLVANIA BOUNDARY MARKER SURVEY

PROGRESS REPORT
(for the period 11/1/79 to 11/1/80)

This report briefly summarizes the first year of work on the Maryland-Pennsylvania boundary marker field survey, under the direction and sponsorship of the Maryland Geological Survey and the Maryland Historical Trust, and made possible by the above Grant-in-Aid.

The project, now extended to two years, has been conducted on a part-time, volunteer basis, and was designed to serve the needs of the two agencies for current information about the some 223 markers set at approximate-mile intervals along the Mason and Dixon West Line (Maryland-Pennsylvania boundary) from Delaware westward across eight Maryland and nine Pennsylvania counties to West Virginia, a distance of about 200 miles (see attached map).

Materials to be prepared for the Maryland Geological Survey, as the agency now responsible for all of Maryland's boundaries (markers, maintenance, periodic inspection) include: notebooks with field sheets (see attached sample form), B&W photos/negatives, color slides, a variety of maps, and other reference materials. Upon completion of the project, a full report will be made to both agencies and will include historical background, discussion of method of work, summary indices and tables updating those of the last such inspection in 1950, and recommendations for future marker maintenance, protection and preservation.

Materials to be prepared for the Maryland Historical Trust include: the updating of the 17 historic sites inventory forms already on file and the adding of about 200 more, replete with B&W photos/negatives, color slides, USGS quadrangle sections, capsule summaries, Magi forms, indices county by county, a comprehensive project map and mylar, and a copy of the full project report. When all the above materials have been submitted, a National Register thematic nomination form will also be prepared, since this West Line is the only portion of the original Mason and Dixon survey of 1763-68 as yet not entered.

* * * *

Field survey. During this first year, we completed the field survey of 91 markers in 7 of the 8 Maryland counties involved: Cecil 24 of 24; Harford 18 of 18; Baltimore 11 of 12; Carroll 20 of 22; Frederick 6 of 14; Washington 11 of about 49; Allegany 0 of about 37; Garrett 1 of about 47. Of these: 80 were original Mason and Dixon markers dating back to 1766-67, of oolitic limestone quarried and cut in England; 4 were later replacements or additions (Nos. 0, 22, 75, and -- 222); 1 was a replica substitute (No. 50) for the original crownstone

MGS MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: 32(34) - 37(39)

HARFORD CO. (6)

✓ MED 37(39) ORIG 1766
JE + AM 2/21/80
HA-1549
UTM: 18.37256.439765

✓ MED 36 (38) ORIG 1766
JE + AM 12/12/79
HA-1023
UTM: 18.37418.439762

✓ MED 35(37) ORIG CROWNSTONE 1766
JE 4/15/80
HA-1548
UTM: 18.37580.439759

✓ MED 34(36) ORIG 1766
JE + RICHARDSON
HA-1547
UTM: 18.37740.439756

5663 I SE (STEWARTSTOWN)

5763 IV SE (HOLTWOOD)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FAWN GROVE QUADRANGLE
MARYLAND—PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

1956 PHOTOREV. 1974
SCALE: 1" = 2000'

✓ MED 33(35) ORIG 1766
JE + AM 12/12/79
HA-350
UTM: 18.37902.439754

✓ MED 32(34) ORIG 1766
JE + AM 12/12/79
HA-351
UTM: 18.38062.439735

Mapped, edited, and published by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1954. Field check 1956

Polyconic projection. 1927 North American datum
10,000-foot grids based on Maryland coordinate system, and Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue

Unchecked elevations are shown in brown

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U.S. Route — State Route

QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs taken 1974. This information not field checked

FAWN GROVE, MD.—PA.

N3937.5—W7622.5/7.5

1956
PHOTOREVISED 1974
AMS 5763 III NW—SERIES V833

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1975

✓ McD 44 (47) ORIG 1766
A.M. + C.M. 12/9/79
BA-1563
UTM: 18.36126.439783

✓ McD 43 (46) REPLACEMENT 1902 W. ORIG 1767, rel. [illegible]
A.M. + C.M. 2/10/80
BA-1562
UTM: 18.36310.439779

✓ McD 42 (45) ORIG 1766
A.M. + C.M. 2/10/80
BA-1561
UTM: 18.36447.439776

McD 41 (44) ORIG 1766
JE + AM 2/21/80
HA-1550
UTM 18.36620.439768

✓ McD 40 (42+43) REPLACEMENT CROWN STONE ORIG 1767 FROM WASHINGTON CO. (only below ground part remains) RELOCATED SITE (1902)
JE + AM 2/21/80. A.M. 2/10/80
HA-1015
UTM: 18.36770.439768
NOTE: ORIG. STONE MISSING (ABOVE GROUND) — ORIG. SITE MAY STILL BE MARKED BY BASE BELOW GROUND (?) 40(42)

M65 MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS.
38(40) – 41(43)

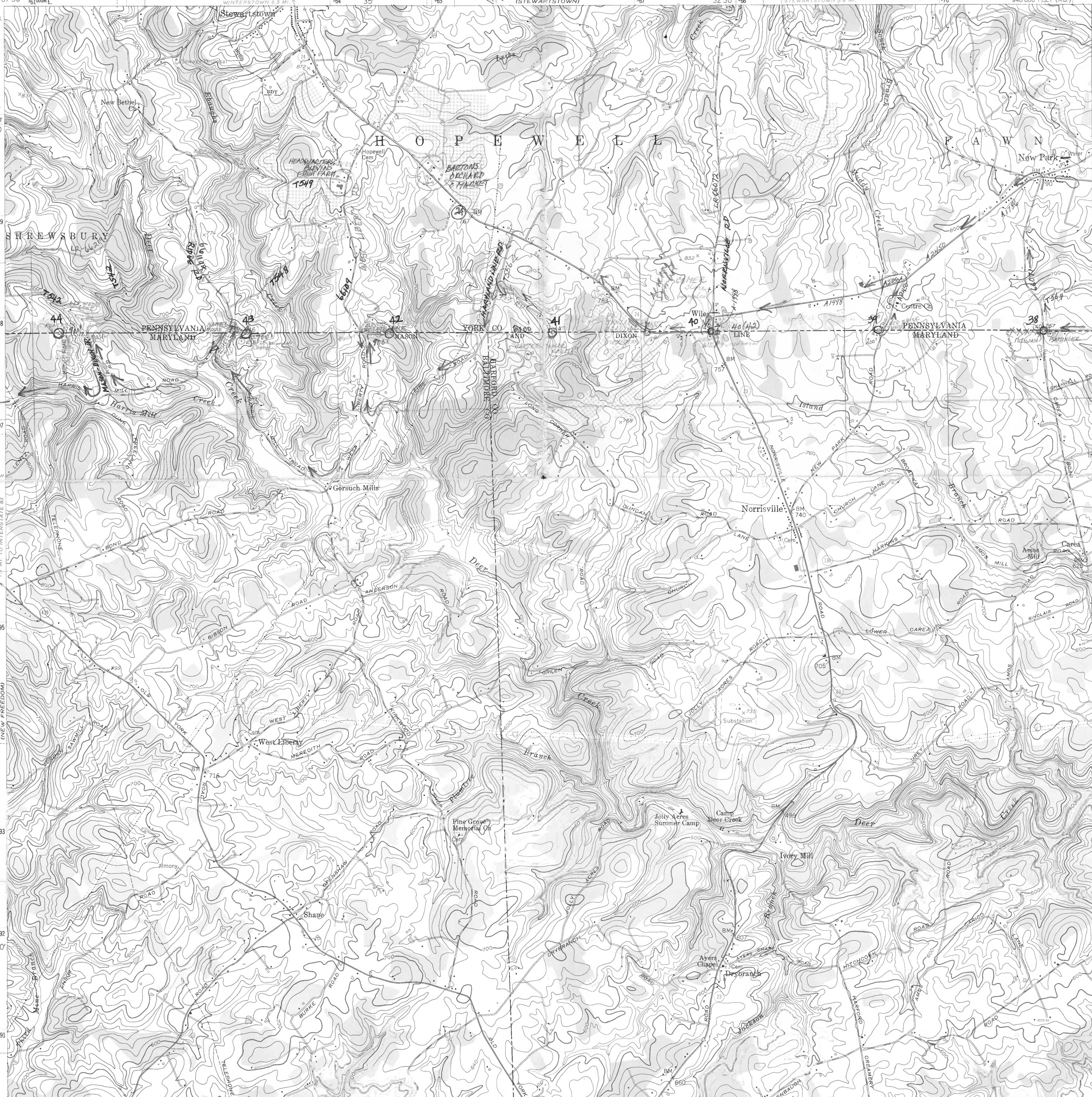
HARFORD CO. + BALTO. CO. (7)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

NORRISVILLE QUADRANGLE
MARYLAND—PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

USGS 1957 PHOTOREV. 1974
SCALE: 1" = 2000'



McD 39 (41) ORIG 1766
JE + AM 2/21/80
HA-1024
UTM: 18.36940.439732

SE corner of junction
McD 38 (40) ORIG 1766
JE + AM 2/21/80
AM + CM 7/19/80
HA-524
UTM: 18.37102.439766

NOTE: when MD 23 becomes PA 24 — remove marker symbol (it used to be a PA 3-sided concrete pylon set by PA-DOT) no longer there

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and USSCS

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1943. Field check 1944
Culture revised by the Geological Survey 1956—1957

Polyconic projection. 1927 North American datum
10,000-foot grids based on Maryland coordinate system, and Pennsylvania coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue

Unchecked elevations are shown in brown

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

MARYLAND
QUADRANGLE LOCATION

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1974. This information not field checked.

ROAD CLASSIFICATION 1964
Heavy-duty · Light-duty
Medium-duty · Unimproved dirt
State Route

NORRISVILLE, MD.—PA.

N3937.5—W7630/7.5

1957
PHOTOREVISED 1974
AMS 5663 II NE—SERIES V833

(MGS) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: 25(27) - 31(33)

HARFORD CO (5)

✓ M&D 31(33) ORIG 1766
JE + Myrtle Grier Johnson 2/14/80
UTM: 18.38229.439750
HA-1546

✓ M&D 30(32) ORIG CROWNSTONE 1766
JE + Myrtle Grier Johnson 2/14/80
HA-1545
UTM: 18.38390.439746

✓ M&D 29(31) ORIG 1766
JE + AM 12/12/79
HA-1022
UTM: 18.38550.439744

✓ M&D 28(30) ORIG 1766
JE + Lewis Mason 4/17/80
HA-1544
UTM: 18.38706.439743

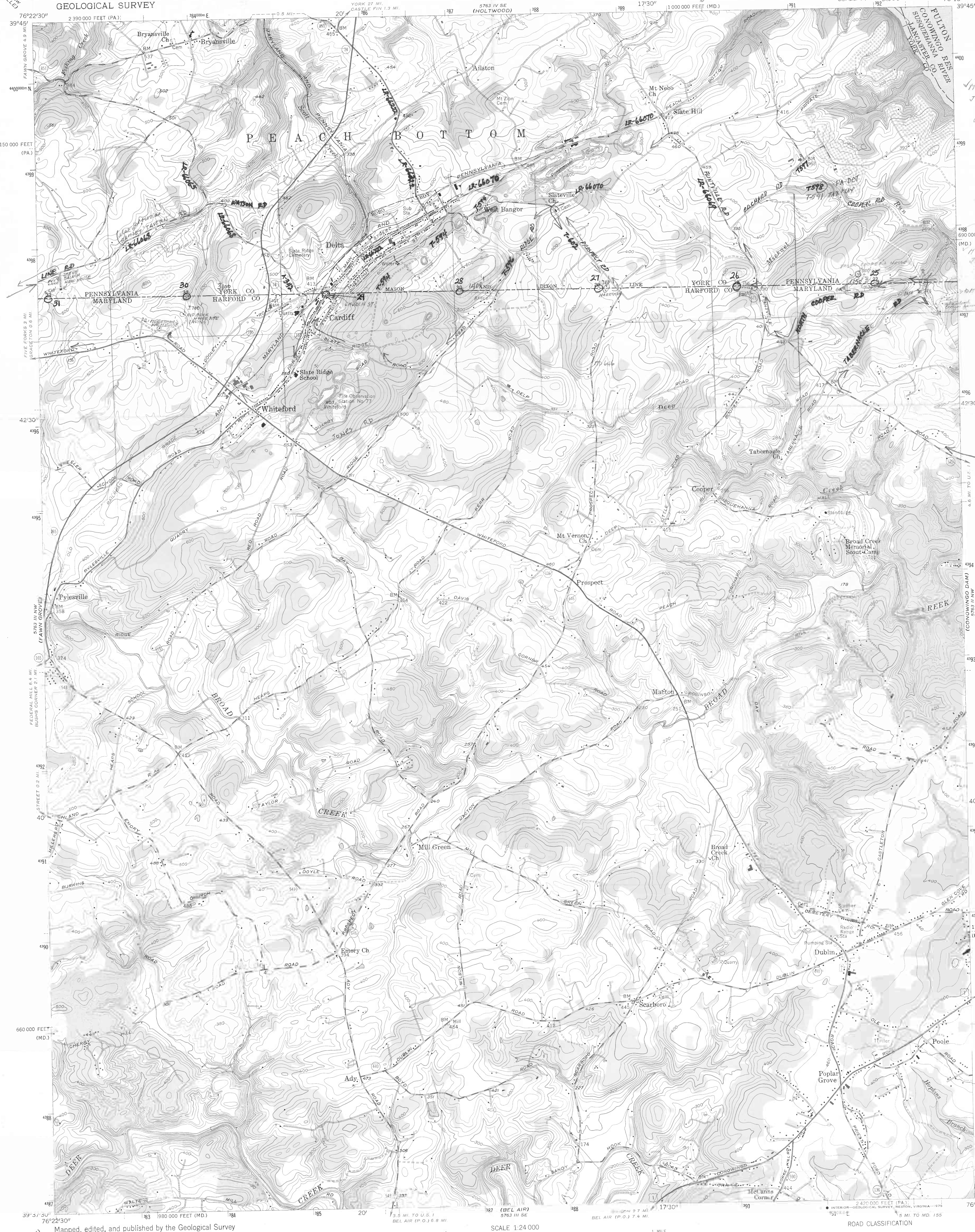
✓ M&D 27(29), ORIG 1766
JE + AM 12/12/79
HA-121
UTM: 18.38870.439740

✓ M&D 26(28), ORIG 1766
JE + Lewis Mason 4/17/80 & POOLES
HA-1543
UTM: 18.39030.439790

✓ M&D 25(27) CROWNSTONE ORIG. 1766
JE + A.M. 12/12/79
HA-118
UTM: 18.39191.439737

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DELTA QUADRANGLE
MARYLAND—PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
1956 PHOTOREV. 1974, SCALE 1:2000



Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and USCE

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1954. Field check 1956

Polyconic projection. 1927 North American datum
10,000-foot grids based on Maryland coordinate system
and Pennsylvania coordinate system, south zone

1000-metre Universal Transverse Mercator grid ticks,
zone 18, shown in blue

Revisions shown in purple compiled from aerial photographs
taken 1974. This information not field checked

UTM GRID AND 1974 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

MARYLAND
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route

DELTA, MD.—PA.

N3937.5—W7615/7.5

1956
PHOTOREVISED 1974
AMS 5763 III NE—SERIES V833

✓ MED 50 (53): CROWNSTONE REPLICA (REPLACEMENT & RELOCATION 1902) [ORIG (AT MHS, BALTIMORE] AM 3/9/79 · AM+CM 12/5/79 BA-1569 UTM: 18.35178.439798

MED 49 (52): ORIG 1766 (UNEXPOSED) A+C 1/19/80 BA-1568 UTM: 18.35319.439795 as of 1/82 NOT YET FOUND

✓ MED 48 (51): ORIG. 1766 AM +CM 1/19/80 BA-1567 UTM: 18.35482.439794

✓ MED 47 (50): ORIG. 1766 A.M. 3/9/79, 12/5/79 A.M.+C.M. 1/19/80 BA-1566 UTM: 18.35638.439792

(M65) MASON & DIXON WEST LINE (MD-PA) BOUNDARY MARKERS: 45 (48) – 50 (53)

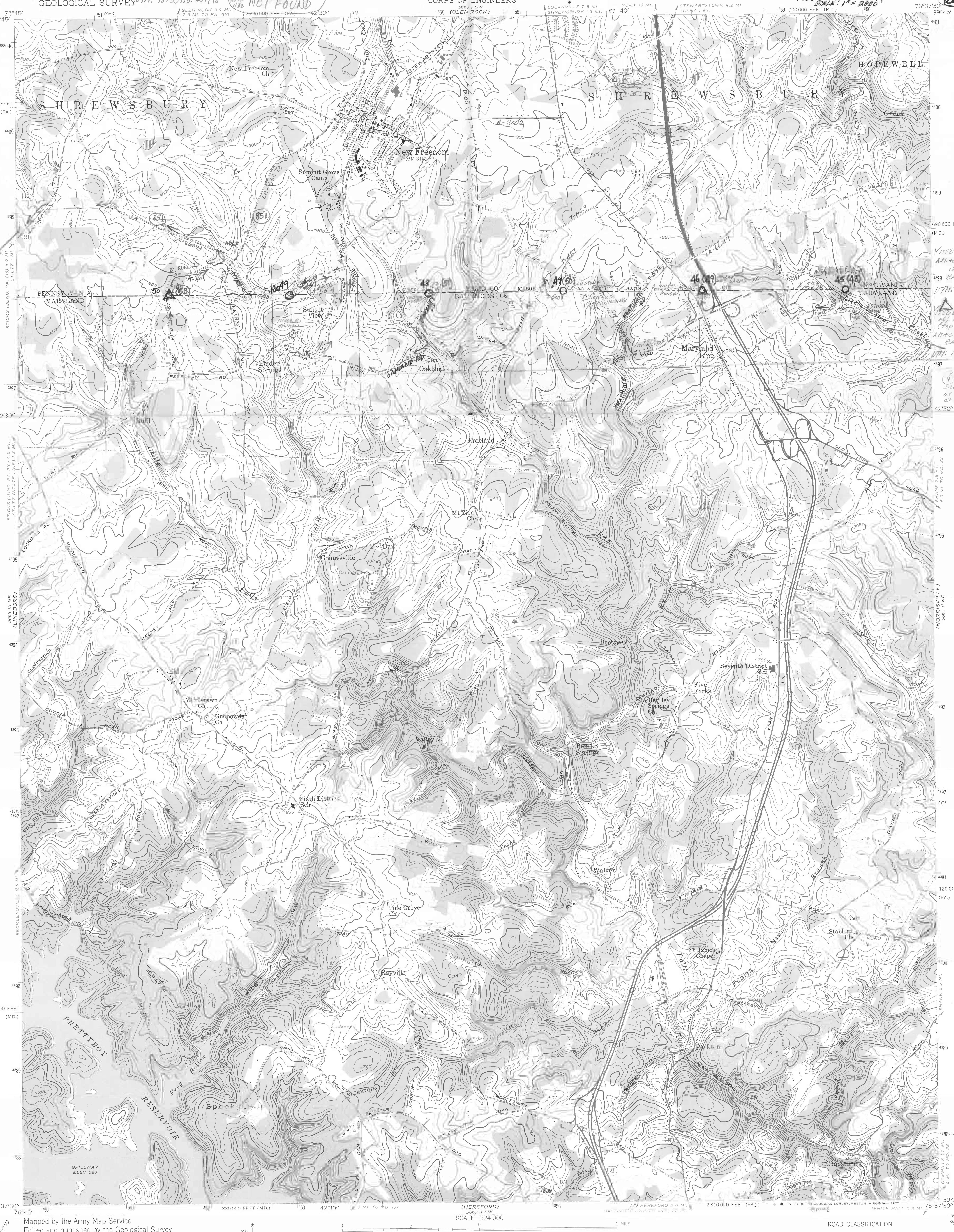
BALTIMORE CO. ⑧

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

NEW FREEDOM QUADRANGLE
MARYLAND–PENNSYLVANIA
7.5 MINUTE SERIES (TOPOGRAPHIC)

1958 PHOTOREV. 1974
SCALE: 1" = 2000'



Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, USC&GS, USCE, and U. S. Soil Conservation Service

Topography from aerial photographs by photogrammetric methods. Aerial photographs taken 1943
Culture revised by the Geological Survey 1958

Polyconic projection. 1927 North American datum
10,000-foot grids based on Maryland coordinate system, and Pennsylvania coordinate system, south zone
1000-metre Universal Transverse Mercator grid ticks, zone 18, shown in blue

Unchecked elevations are shown in brown

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1974. This information not field checked.

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route

NEW FREEDOM, MD.—PA.

N3937.5—W7637.5/7.5

1958
PHOTOREVISED 1974
AMS 5663 II NW—SERIES V833

now housed by the Maryland Historical Society; and 6 were either missing (Nos. 9, 65, 67), thought to be paved over (No. 56), or broken off at the base (Nos. 40, 46). The condition of most of the crownstones (originally set every fifth mile through No. 130) and the intervening milestones was surprisingly good. On a scale of excellent/good/fair/deteriorated /ruins/ unexposed/missing: 4 were considered in excellent shape (Nos. 22, 46, 50 original and replica, 54); 44 were good to very good; 27 were fair to good; 8 were deteriorated; 2 were unexposed (Nos. 5, 55); 6 were missing. The extent of protection of these markers was also a surprise: 63 reasonably protected (through surrounding property owner interest or remoteness of site); 22 endangered (by subdivision development, neglect, farm machinery or other vehicular traffic); 6 missing.

MGS notebook materials/MHT inventory materials. For the Maryland Geological Survey: the first of three Cecil County notebooks was turned in, and the other two nearly completed; Harford County materials were assembled but not completely labeled and typed; and field sheets, photos/negatives, color slides, maps and other materials were assembled but not fully labeled for the remaining 49 markers. For the Maryland Historical Trust: photos/negatives, color slides, USGS quadrangle sections for all 91 markers were assembled but not completely labeled.

Research/consultation. We researched ownership records for properties surrounding the markers in county seats of 5 of the Maryland counties (Cecil, Harford, Baltimore, Carroll, and Frederick) and 4 of the Pennsylvania counties (Chester, Lancaster, York, and Adams); reviewed additional research resources there as well as in Baltimore, Annapolis, Washington, D.C., and Newark and Dover, Delaware; consulted a number of times in Baltimore and Annapolis with the Maryland Geological Survey (Dr. Kenneth N. Weaver, Tyler Bastian and project monitor, Joseph McNamara) and the Maryland Historical Trust (Nancy Miller, Mark Edwards and Pamela James); and made innumerable contacts with local historians and residents concerning markers along this and the other Mason and Dixon survey lines.

Expenses and contributed time/mileage. Of the $ 3,133.00 budgeted to cover the expenses for the entire project: $1,478.32 was spent during this first year. Of this amount: $658.96 was for 3,679 miles traveled (@ 16¢ then 18¢/mile) + $4.80 for parking fees/tolls; $33.60 for room/board; $529.73 for film/film processing/photographic supplies; $230.94 for office supplies (maps/folders/paper/notebooks/etc.); $2.64 for communications (long distance phone); and $17.65 for duplicating.

Contributed time/mileage/miscellany during this 12-month period amounted to an equivalent of $4,939.32. Of this amount: $4,730.55 was for 727¾ hours volunteered @ $6.50/hour; $181.07 for an additional 1,007 miles traveled + 25¢ parking; $27.45 for lodging/meals.

* * * * *

Plans for completion of project. With extension of the contract to November 1, 1981, I plan to complete all field work and materials due the Maryland Geological Survey and Maryland Historical Trust, with the exception of the National Register nomination form, which must await field work and documenting of the markers along the last leg of the 1763-68 Mason and Dixon survey, some 33 miles west of Maryland's northwest corner (and not a part of the contract).

Alice Martin

Mason & Dixon: their Line and its Legend

By A. HUGHLETT MASON *and* WILLIAM F. SWINDLER

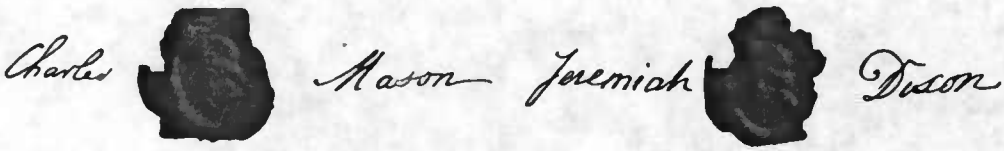
Lines on maps may be drawn by engineers, but they are interpreted by political events. Seldom has history recorded an amicable and abiding acceptance of such demarcations when they involve restless dynastic movements, whether the example be Pope Alexander VI's division of the New World in 1493 between Spain and Portugal, or the twentieth century's unhappy establishment of the border between East and West Berlin after World War II. The surveyor's work becomes a symbol, and his name may become a catch phrase for a congeries of political and social issues of which he never dreamed.

The prime illustration of such an event in the United States is the line laid out for a total of about 332 miles by two English astronomer-surveyors between 1763 and 1767, to settle a dispute between the Penns and the Baltimores. For more than eighty years these powerful proprietaries had contended over the precise location of their common border. When they finally settled upon these two scientists to direct an impersonal, mathematically dependable survey, they set the stage for an engineering feat of impressive dimensions for that time.

But Charles Mason and Jeremiah Dixon were destined to be remembered for their substantial engineering and scientific accomplishments only in the annals of specialists. Mason, among other things, later completed a catalogue of 387 stars, which, when incorporated into a nautical almanac published in 1787, became the standard authority on the subject for a number of years. Dixon, a county surveyor and amateur astronomer, was considered sufficiently adept in his field to be elected to the Royal Society. He took part in several overseas scientific expeditions for the Society.

For considerably more than a century, however, what the average American has understood by the Mason-Dixon survey has been a figurative division between two frames of reference in national life. Just as the South—and, for that matter, the North—tended to become a state of mind, so the Mason-Dixon Line has come to be viewed only incidentally as a real border and more as a line of transition between these two states of mind. In the national psychology it is thought of as a jagged extension of the border between Pennsylvania and Maryland to some vaguely defined point on the Missouri-Kansas border.

Just when this popular concept first took shape is not easy to say. Obviously, as sectional consciousness in the matter of slavery increased in the first half of the nineteenth century, the fact that Maryland, the most northerly slave state, was divided from Pennsylvania's free soil by the Mason-Dixon survey impressed itself upon the public mind. The Ohio River, as the border between the southern state of Kentucky and the Northwest Territory, where slavery was prohibited, was a natural landmark extending the symbolism



No portraits of either Mason or Dixon are known to exist: their seals and signatures on the original survey contract are shown above. Opposite: a typical Mason-Dixon "crownstone" marker, placed every fifth mile along the line—this one near Rising Sun, Maryland. Though eroded by time, the arms of the Penns are still visible on this northern side; the southern bears Lord Baltimore's.

PHOTO BY A. AUBREY BODINE

AMERICAN HERITAGE, FEB. 1964

THE PROVINCE OF PEN

THE PROVINCE OF MAR

Below: A map printed in 1732 by Benjamin Franklin anticipated the approximate location of the Mason-Dixon Line. Cape Henlopen, marker for the southern border of the "Three Lower County's"—then part of Pennsylvania, now the state of Delaware—appears twenty miles too far south, near Fenwick Island. But the British Court of Chancery nevertheless accepted that location. ***Above and opposite:*** *A detail from Mason and Dixon's own map shows most of their actual line. As Delaware's lower boundary—from* A *(extreme lower right) on Fenwick Island to* B *at Delaware's southwestern corner (five miles west of present-day Delmar, Maryland)—Mason and Dixon accepted the line laid out by earlier surveyors in obedience to the court's fiat. From* B *they drew their line approximately eighty-two miles northward to the northeastern corner of Maryland—point* D *here—some eight miles northeast of modern Elkton. Thence they worked 233 miles westward, to Dunkard Creek and the Monongahela (beyond the scope of this map), some twenty miles from Pennsylvania's southwestern tip. In time, "the Mason-Dixon line" meant only this east-west segment plus an imaginary westward extension, and thus a line between slave states and free.*

of the Mason-Dixon Line, the western terminus of which lay close to that great waterway to the West. Finally, the Missouri Compromise, fixing the northern limit of slave territory at latitude 36 degrees 30 minutes north, westward from the Ohio's juncture with the Mississippi, completed the popular image.

The issues which thus developed in the nineteenth century around Mason and Dixon's survey, and made their names a household phrase, have largely obscured the significant political and scientific results of the original project. That project—a border settlement of the eighteenth century—in turn traced its beginnings to issues which arose in the seventeenth century, and even earlier. The problem really started with England's belated decision to launch her own colonizing efforts in the New World, where Spain and Portugal had long preceded her and where she now found the Netherlands, Sweden, and France in close competition.

Sir Walter Raleigh made the first colonization attempt at Roanoke Island in 1585. After failure of this effort the Virginia Companies of London and Plymouth were chartered, and founded the first two permanent English settlements—at Jamestown in 1607, and at Plymouth in 1620. Unfortunately, James I fixed the northernmost limit of the London Company at latitude 41 degrees north and the southernmost limit of the Plymouth Company at 38 degrees north—an overlap that included more than half of what is now Pennsylvania and New Jersey, and all of Maryland. Within this overlapping area, however, neither company was to settle within 100 miles of the other. This arrangement did, in fact, avoid most arguments between the first and second English colonies; but it multiplied the difficulties for those who came after and settled in between.

One of these was George Calvert, the first Lord Baltimore, whose Maryland charter was granted in 1632. In the course of the next fifty years his heirs were able, in various ways, to overcome claims made by the Dutch, the Virginians, and the Swedes. But the real trouble began only after Charles II's grant of Pennsylvania to William Penn in 1681, and a subsequent grant to Penn by James, Duke of York, of land extending south as far as Chesapeake Bay.

Territorial assignments in seventeenth-century charters were vague, and the technical capacity for accu-

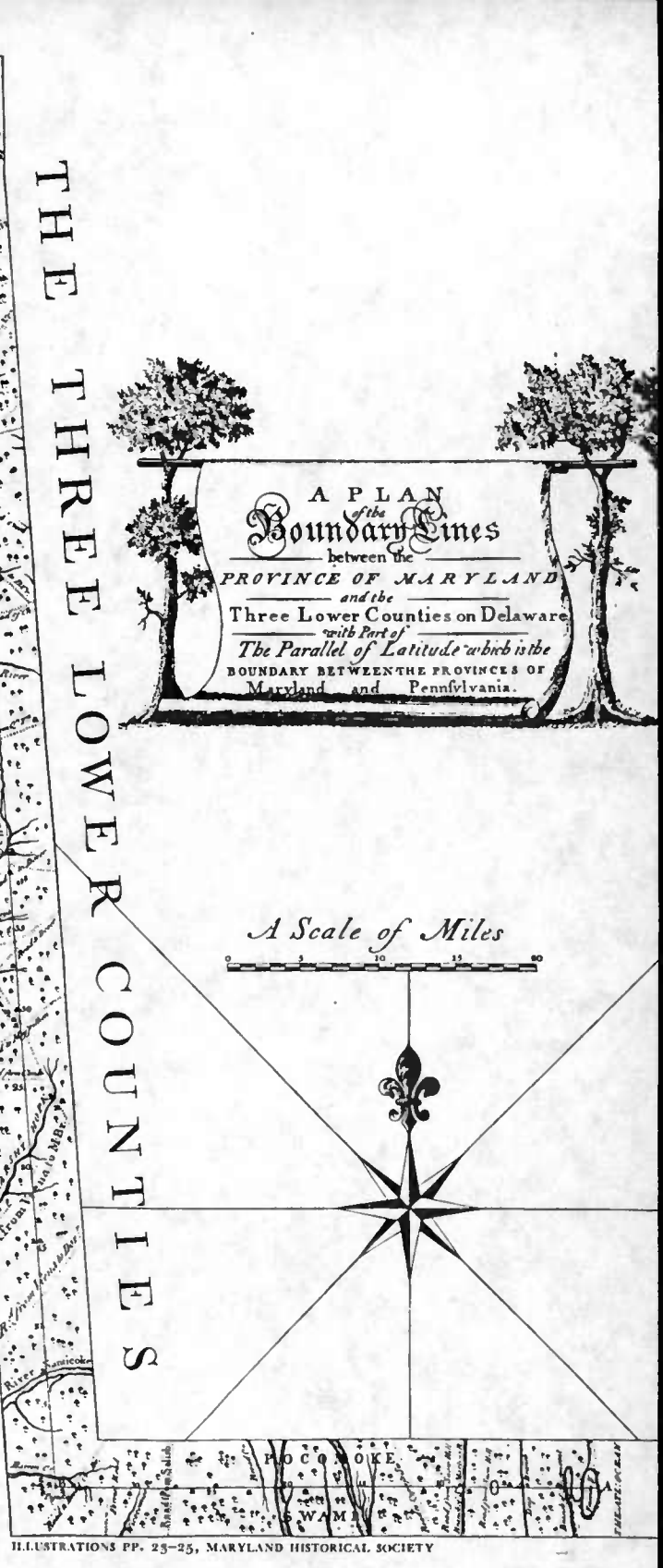
L A N D

rate fixing of boundaries in the unsettled wilderness was extremely limited. Local surveyors had no particular difficulty in laying out sites for towns and individual plantations. There was a political as well as a surveying problem involved, however, in determining the point described in the Maryland charter as its northern boundary—"that Part of the Bay of Delaware on the North, which lieth under the Fortieth Degree of North Latitude, where New England is terminated."

The fortieth parallel would have put Maryland's northern border somewhere within the present city of Philadelphia. When Penn's grant was made in 1681, Charles Calvert, third Lord Baltimore, insisted that his own prior charter should be interpreted literally. Not so, said Penn's party; the original intent of the Maryland charter was to put the border "under" the fortieth parallel—how far "under" being the point at issue. The vicinity of the fortieth parallel was not unacceptable for the main boundary line, but at its eastern end a vital problem arose. A few miles up or down the Delaware estuary could insure or deprive Pennsylvania of a harbor of enormous commercial potential. In addition, there was the question of which colony was entitled to collect taxes from the settlers within the disputed zone. Bitterly but steadily over the years, the Calverts retreated or were pushed southward from their charter position, particularly in the region of Delaware Bay.

Three times—in 1685, 1732, and 1750—the boundary controversy was adjudicated in England by agencies of the Crown. The upshot was that, by 1760, the Penns' proprietary was held to include roughly half of the northern part of the Delmarva Peninsula, separating Chesapeake Bay from Delaware Bay. It was to include, that is, the area now forming the state of Delaware, but at that time known as the "lower counties" of the Penn domain, or simply as "the counties of Delaware."

Determination of their exact boundaries, however, was a prickly matter. The British Court of Chancery had ruled that the Delaware southern border should be a transpeninsular line extending westward from Cape Henlopen—as that point was indicated on contemporary maps. It turned out that the maps showed the Cape too far south by as much as twenty-two miles; but the Court was stubborn, and the transpeninsular line separating the Penns from the Calverts was drawn



ILLUSTRATIONS PP. 23–25, MARYLAND HISTORICAL SOCIETY

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accordingly, to the detriment of the Calverts. The northern boundary of the Delaware counties—which had acquired a form of home rule while remaining within the Penn proprietary—was to be determined by the arc of a circle twelve miles in radius, with its center at New Castle Court House (now New Castle, Delaware).

But the final step—determining the Delaware western border—required the connecting of the midpoint on the transpeninsular line with a tangent point on the arc. The nice astronomical and mathematical steps needed to connect these points proved too much for the colonial commissioners charged with the survey. In 1761, after several months of clearing a line through the wilderness, Thomas Penn's commissioners were compelled to advise him that there had been some basic astronomical miscalculations and "the business set back almost as far as ever." The trouble started, said the commissioners, with a survey telescope that had gone awry; after that everything went wrong.

The telescope "being extended and fixed on a strip of wood . . . after being exposed to a Shower of Rain they perceived the Strip had warped & the Glass did not represent Objects precisely in the places they possessed." Apparently the Penns, accustomed to the considerable scientific sophistication of mid-eighteenth-century England, could not at first believe that the colonials were incapable of handling the problem. A letter from Dr. John Robertson, master of the Royal Naval Academy at Portsmouth, however, assured them of its difficulty and of the need for competent instruments competently used. Added to this was the prospect that erroneous surveys could run into money; as one Pennsylvania commissioner wrote Thomas Penn in 1763, if local scientists surveyed the border, "and if afterwards on Examination of the Work by Mathematicians in England it should be pronounc'd wrong, can Lord Baltimore take advantage of this, set it aside and procure an order to do it over again?"

The obvious solution was "to send over from England some able Mathematicians with a proper set of Mathematical instruments." These persons, in addition to their scientific competence, were to be "of Great Integrity and totally unbiassed and unprejudiced on either side of the question." Eighty years of argument had crystallized the Penns' and Calverts' mutual distrust of each other. Apparently the nomination of the qualified "mathematicians" was solicited from the Astronomer Royal, Charles Bradley, director of the Greenwich Observatory, and his successor, Nathaniel Bliss.

The Astronomer Royal, it happily developed, had the men and the instruments for the job. Charles Mason had been assistant observer at Greenwich from 1756 to 1760, during which time he had worked closely with Bradley on a monumental catalogue of positions of the moon, and on the designing of improved instruments for astronomical observations. And Jeremiah Dixon had early shown enough mathematical precocity to bring him to the attention of John Bird, the creator of many astronomical instruments at Greenwich and a member of the Royal Society. Dixon was described to Penn as a competent surveyor from Durham County, England.

In 1761, England and several leading continental powers had joined in an international scientific project—securing data from more than a hundred points in Europe, Africa, and the Far East during the transit of Venus across the face of the sun, in order to determine more precisely the mean distance between earth and sun. Mason and Dixon drew an assignment to proceed to the island of Sumatra and make observations. A French man-of-war interfered with their sailing schedule, however, and they were able to get only as far as the Cape of Good Hope by the date of the transit. Even so, their observations from that point were praised more than a century later by a scientist at the United States Naval Observatory as being among the most accurate of the whole project.

When in 1762 the two men returned to England by way of the island of St. Helena, they brought information about two instruments that were to figure substantially in their coming assignment in the New World. One was an astronomical clock, made for the Royal Society to aid in determining the ellipticity of the earth. It was this same clock which was later to be shipped to Mason and Dixon to make the New World's first accurate determination of longitude by means of the eclipses of the satellites of Jupiter.

Perhaps more important was the zenith sector which had been used at St. Helena by Mason's mentor, the astronomer Nevil Maskelyne. This instrument, a graduated arc of a vertical circle used in conjunction with a telescope and plumb line, Maskelyne found to have a serious flaw, owing to the manner in which the plumb line was suspended. As a consequence of his findings, the Royal Society at once set to work to construct a corrected sector, and this new instrument was brought by Mason and Dixon when they came to America. It was thus that Thomas Penn could write with confidence to the Reverend Richard Peters, former secretary of the colony, that the right men and the right equipment had at length been found. Messrs. Mason

Frederick Calvert, Sixth Lord Baltimore, whose elegant portrait by Johann Ludwig Tietz appears on the opposite page, authorized the Mason-Dixon survey for his Maryland province, which he never visited.

and Dixon, he wrote, would bring with them "the fine Sector, two Transit Instruments, and two reflecting Telescopes, fit to look at the Posts in the Line for ten or twelve miles."

The Penns and Frederick, the sixth Lord Baltimore, having agreed on Mason and Dixon as the realm's best-qualified surveyors, a contract was drawn up on July 20, 1763, stipulating their responsibilities and compensation, the latter to be ten shillings, six pence a day until their arrival in America, and one pound one shilling daily for the period of the survey. The expenses of the project were to be shared equally by the proprietors, and the English scientists were to file identical reports of their findings with the commissioners from each colony. Mason and Dixon were to come to America as soon as possible.

In the course of the protracted dispute over their border, the proprietors had finally agreed that the boundary line between Maryland and Pennsylvania proper should be run east and west along a latitude circle fifteen miles south of the southernmost limit of the city of Philadelphia. The first task for Mason and Dixon on arriving in the colonies was therefore to accurately fix this starting point. The men reached Philadelphia November 15, 1763, unpacked their instruments, and began construction of a small building to serve as their first observatory. By the first of December the "gentlemen commissioners" from Maryland arrived, and in company with those from Pennsylvania, they inspected and confirmed the spot which marked the southernmost limit of the city. After some sixty observations of stars selected from Bradley's *Catalogue*, made over a period of three weeks, Mason and Dixon determined that this spot was at latitude 39 degrees 56 minutes 29.1 seconds north—a finding which later observations showed to be in error only by 2.5 seconds.

Moving westward along this line of latitude to the farm of John Harlan on the Brandywine, "the Telescope &c of the Sector . . . carry'd on the Springs (with feather beds under it) of a Single Horse Chair," the surveyors made further observations from a point where they could run a direct line fifteen miles south —to "a plantation belonging to Mr. Alexander Bryan," the precise spot being in the middle of the front of Mr. Bryan's house. This finding was duly accepted by the two commissions, and the way finally opened for an official determination of the boundary between Pennsylvania and Maryland.

It was long overdue; Mason noted in his journal that the former sheriff of Lancaster had described to him an incident in which a "Mr. Crisep," living on the Susquehanna in territory he maintained was in Maryland, had been set upon by fifty men from Pennsylvania who burned his house and shot one of the besieged party as they ran out. "Mr. Crisep" appears to have been Colonel Thomas Cresap, whose house indeed was burned in 1736—in retaliation, it was alleged, for numerous acts of violence which Cresap's "border ruffians" had precipitated. (The Colonel, incidentally, survived the attack reported to Mason and lived to earn laurels as a patriot in both the French and Indian War and the Revolution.) There were frequent occasions when the border claims of both proprietaries had flared into armed combat.

Mason took a keen interest in all his New World surroundings, both scientific and nonscientific. Once when winter weather suspended surveying, he and his colleague went to New York for a couple of weeks to enjoy the activities of that colonial community. En route they stopped at "Prince Town in the Jersies" and Mason admired "the most elegant built Colledge I've seen in America." On another occasion, when the survey was getting under way, Mason took a short side trip to see a large cave, describing the church-like atmosphere in a lugubrious vein:

> On the side walls were drawn by the Pencil of time, with the tears of ye Rocks: the imitation of organ, pillar, collumns and monuments of a Temple; which, with the glinting, faint light, makes the whole an awful, solemn appearance, Striking its Visitors with a strong and melancholy reflection: That, such is the abodes of the Dead; Thy inevitable doom, O Stranger, soon to be numbered as one of Them.

The business at hand, however, occupied most of the scientists' attention. On the Harlan farm, where they set up a more or less permanent headquarters, they erected a crude monument, known by the unindoctrinated for many years after as the "stargazers' stone," and spent much of the snowbound winter making observations.

The Penns and Lord Baltimore had been unduly optimistic as to the period required for the survey, and the deadline had to be extended several times. Weather, transportation, the cumbersome procedure of meeting periodically with the commissioners to make progress reports, and, in the late stages of the project, the threat of Indian interference—all interposed delays. On the whole, however, the parties on both sides were quite satisfied with the work of Mason and Dixon. True, in April of 1764 Governor Horatio Sharpe of Maryland received a letter from Cecilius Calvert, secretary of the colony, alleging that the Penns had offered the Englishmen a contract for the surveying of Pennsylvania's northern border as a *douceur* if the southern border survey treated the Quaker colony right. But on finding that Mason and Dixon had located their original point, fifteen miles south of Philadelphia, a quarter of a mile farther north than previous surveys

had indicated, the Calverts' suspicions were quieted.

Before actually surveying the line for the northern boundary of Maryland (39 degrees 43 minutes 17.6 seconds), Mason and Dixon proceeded to establish the Maryland-Delaware boundary. On June 25, 1764, they arrived at the southwest corner of Delaware as established by the colonial surveyors—a point midway on the transpeninsular line running west from where Cape Henlopen was indicated on the early maps. From this point Mason and Dixon ran the tangent line to the New Castle "twelve mile arc." On September 25 they reported that this line, as finally run, lacked only two feet, two inches of tangency to the twelve-mile circle; and as the length of the line was over eighty-two miles, it was accepted by the commissioners.* The scientists stored their instruments for the winter, and the party disbanded to await more favorable weather. On April 4, 1765, Mason and Dixon returned to the Bryan plantation, fifteen miles south of the latitude of Philadelphia, where they set up the zero milestone for the survey of the main segment of their line, the Maryland-Pennsylvania boundary. There they placed a reference marker which in their notes they frequently described as the "Post mark'd West."

In the running of the border Mason and Dixon, using astronomical observation and the laws of spherical geometry, checked their geographical positions every eleven and a half miles—more precisely, every ten minutes of great circle. Deviations were then corrected at each mile point. These points, temporarily marked by posts, were on the true parallel of latitude and represented the boundary between Maryland and Pennsylvania.

To facilitate sighting and marking, the surveyors employed axemen to clear a rough corridor (or "Visto," as they called it) "8 or 9 yards wide" along the points of their periodic observations and measurements. Horizontal measurements were taken with a Gunter's chain of sixty-six links on level ground, and with a triangular-shaped surveyor's "level" on the slopes. By this procedure of making horizontal measurements controlled by astronomical observations they continued westward, until ultimately, on October 9, 1767, they reached a point about 233 miles from the "Post mark'd West," beyond which the Indian tribes refused to permit further work.

The survey was consistently meticulous. "To prove that the Chain Carriers had made no error," Mason wrote in his journal at one point, "I took a Man with me, a few days after, and measured it myself; and made it within a link of the same." After the first twenty-five miles the party (about a dozen persons) retraced their steps and checked their work. By June, 1765, they were again moving westward, crossing the Susquehanna at Peach Bottom, Pennsylvania, and continuing to the summit of the Blue Ridge mountains, which they reached in late October. Here Mason and Dixon suspended the survey for the season, left their instruments "not in the least damaged to our knowledge" with Captain Evan Shelby, a well-known frontiersman, and spent the next few weeks checking their distance measurements as they returned eastward.

The winter months of January and February, 1766, were spent sightseeing in adjacent colonies, including a trip to Williamsburg, "the Metropolis of Virginia,"

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* This survey, when completed, included a 1.466-mile arc of the twelve-mile circle itself, plus a 3.574-mile "North Line" connecting the arc with the northeast corner of Maryland.

BOTH: HISTORICAL SOCIETY OF PENNSYLVANIA

Acting for Pennsylvania in the border negotiations were the sons of William Penn. Richard Penn (far right), like Lord Baltimore, never saw the disputed territory; Thomas (right) was in America from 1731 to 1742.

Mason & Dixon: their Line and its Legend

CONTINUED FROM PAGE 29

and a call on Governor Sharpe at Annapolis. By late March, they were back at Captain Shelby's and again moving westward until, on June 16, Mason noted that they had reached "the most westernmost Waters [the headwaters of the Potomac] that runs to the Eastward in these parts." It seems, in fact, that the surveyors believed they were getting close to "the Boundary between the Natives and strangers, in these parts of His Brittanic Majesties Collonies."

The party now set itself to the task of establishing the actual markers for the border they had fixed. Mason noted in his journal on June 18, 1766:

> Set a Post (18 inches square 3 feet in the Ground and 5 out) . . . mark'd M on ye South Side, P on ye North Side, and W on the West: and began to cut a Visto in the true Parallel, or Line between Maryland and Pennsylvania . . . By drawing it thro' Points, laid off from the Line we had run . . . toward the Post mark'd West in Mr. Bryan's field.

On the tangent line of the boundary between Maryland and the Delaware counties, the party was provided with limestone markers which had been cut in England for the purpose and shipped directly to various points on Chesapeake Bay. These were set at every mile point, with every fifth marker distinguished by a "crown stone" on which were carved the arms of the proprietors in place of the M or P. On one occasion while setting the stones along the "West Line" the scientists had an opportunity to view it from the summit of a hill and observe its curvature. Mason wrote, "I saw the Line, still form'd the arch of a . . . circle, very beautiful, and agreeable to the Laws of a Sphere." He also indulged his keen interest in landmarks along the way, and in recording the moral which might be drawn from them:

> Went to see Fort Cumberland [he wrote on June 27, 1766] . . . Going to the Fort, I fell in to General Braddock's Road, which he cut thro' the Mountains to lead the Army under his command to the westward in the year 1755 but, fate: how hard: made thro' the desert a path, himself to pass; and never, never to return.

Most of the summer and autumn of 1766 was spent in prolonging the Maryland-Pennsylvania border to the approximate limit indicated by the Pennsylvania charter, five degrees in longitude westward from their starting point. The scientists also extended the line from the "Post marked West in Mr. Bryan's Field" eastward to the Delaware River. This project they completed on December 1, 1766. The commissioners, however, desired to have the main line go farther westward, and advised Mason and Dixon that Sir William Johnson, the royal agent for Indian affairs, was negotiating with the natives for its further extension into their territory. Additional work would await the outcome.

This was agreeable with Mason and Dixon. They had observed that the smooth terrain on what is now the Delmarva Peninsula was well adapted to a geodetic determination of the exact linear measure of one degree of latitude this far from the equator. They appealed to Maskelyne, then the Astronomer Royal at Greenwich, who arranged for the Royal Society to sponsor and finance the undertaking. The Society also granted their requested fee of £200 for the work, and assured them that if the proprietors should not be willing to give them their passage money after the delay which would be occasioned by this extra project, the Society would make it good.

But both Frederick, Lord Baltimore, and the Penns acquiesced in this research, and the Penns even sent the scientists some instruments which they had recently acquired. Not only would the work occupy the geodesists during the winter while negotiations between Sir William and the Indians were being carried on, but, as it developed later, the commissioners were interested in having the results of the investigation in order to fix the precise length of a degree of longitude along the east-west border. (This could be calculated from the value of a degree of latitude.)

Maskelyne sent his colleagues a long letter of instruction for the most accurate astronomical measurements, and through the instrument maker John Bird he arranged for the fashioning of a five-foot brass rod as a standard measure. With the aid of these and other improved instruments sent from abroad, Mason and Dixon determined, on the Delmarva Peninsula, the first precise value of dimensions of the earth ever made in North America.

In June, 1767, Sir William Johnson advised that the Six Nations had reluctantly consented to a limited extension of the border between Pennsylvania and Maryland. The situation could be rather delicate, the commissioners warned Mason and Dixon: "As the public Peace and your own Security may greatly depend on the Good Usage and Kind Treatment of these [Indian] Deputies" who were to accompany the party, "Spirituous Liquors" were to be given to them only in small quantities and not more than three times a day.

The Englishmen were eager to gather information

about the country beyond the Atlantic seaboard for scientific and perhaps for political reasons. Much of Mason's journal for this part of the survey was devoted to "a description of the Ohio and Mississippi, as describ'd to me by Mr. Hugh Crawford, our Interpreter, who has traversed these parts for 28 years." From this description he noted:

From the end of our line to the Ohio on a West Course is about forty miles . . . This West Line . . . if extended would . . . pass through the Southern part of the Illinois. The distance about 7 or 800 miles. A country says my informer thro' which you may travel 100 Miles, and not find one Hill, or one Acre of barren land.

The survey itself was not destined to go much farther. Shawnee war parties were reported to be active, and the escorting Senecas and Delawares had no intention of running into them. A sizable group of Indians had made up the escort, but throughout August and September there was a steady flow of departures. Mason and Dixon prevailed upon their axemen to stay with them, however, until on October 9, 1767, they reached the mouth of Dunkard Creek about thirty miles east of what is now Pennsylvania's southwest corner. Here the remaining Indians unanimously declared that the line could not be extended farther. The Englishmen accordingly took their final observations—"233 Miles, 3 Chains and 38 Links from the Post mark'd West."

Winter came early in the high altitudes, and as Mason and Dixon worked their way back eastward, foot-deep snow hampered them. It was not possible to convey the remaining limestone markers to the western-

A Short Time Between Drinks

Other colonial surveys besides that of Mason and Dixon were fraught with political overtones, both foreign and domestic. In 1726, for example, when North Carolina became a royal colony, the Crown directed its governor and that of Virginia to undertake a joint survey of the "dividing line." The colorful William Byrd II, Virginia's commissioner, tried to put the North Carolinians in a duly cooperative mood with his letter advising them of the plan the Virginians proposed to follow:

"It is very proper to acquaint you in what manner we intend to come provided, that so you Gentlemen, who are appointed in this same station, may if you please do the same honor to Your government. We shall have a Tent with us and a Marquis [canopy] for the convenience of ourselves and our servants. We shall be provided with as much Wine and Rum as will enable us and our men to drink every Night to the Success of the following Day, and because we understand there are many Gentiles on your frontier who never had an opportunity of being Baptised we shall have a Chaplain to make them Christians. For this Purpose we intend to rest in our Camp every Sunday that there may be leisure for so good a work. And whosoever of your Province shall be desirous of novelty may report on Sundays to our Tent and hear a Sermon. Of this you may please give Public Notice that the Charitable Intentions of this Government may meet with the happier Success."

After frequent delays and adventures—Byrd complained of the "anguish distempers" of the Dismal Swamp and of the "Adamites, without innocence," who lived with Indian women thereabout—the joint commission started westward. From the Atlantic to the foothills of the mountains, things went fairly well, but on Sunday, October 6, 1729, the North Carolina commissioners advised their Virginia colleagues that they did not intend to proceed farther. Byrd says the going was becoming rougher, and the Carolinians had failed to provide for an adequate flow of supplies to the advance bases. In any case, he reported this denouement of the joint project:

William Byrd II

"When the Divine Service was over, the Surveyors set about making the Plats of so much of the Line as we had run . . . Our pious Friends of Carolina assisted in this work with some Seeming Scruples, pretending it was a Violation of the Sabbath, which we were the more Surpriz'd at, because it happen'd to be the first Qualms of Conscience they had ever been troubled with during the whole journey. They had made no Bones of Staying from Prayers to hammer out an unnecessary Protest, tho' Divine Service was no Sooner over, but an unusual Fit of Godliness made them fancy that finishing the plats, which was now matter of necessity, was a prophanation of the Day. However, the Expediency of losing no time, for us who thought it our duty to finish what we had undertaken, made such a Labour pardonnable.

"In the Afternoon Mr. FitzWilliam, one of the Commissioners for Virginia, acquainted his Colleagues it was his Opinion, that by his Majesty's Order they could not proceed farther on the Line, but in Conjunction with the Commissioners of Carolina; for which reason he intended to retire, the Next Morning, with those Gentlemen.

"This looked a little odd in our Brother Commissioner [FitzWilliam, Byrd said, wanted to return to preside over the opening of court in Williamsburg and thus draw double pay as a judge and a Commissioner]; tho', in justice to Him, as well as to our Carolina Friends, they stuck by us as long as our good Liquor lasted, and were so kind to us as to drink our good Journey to the Mountains in the last Bottle we had left."

most part of the line, so mounds of earth and rocks were constructed to identify the border. By the end of December they were able to report to the joint commission that the work had been completed. The final request of the commission was that Mason and Dixon prepare a map of the border for an engraver and that they provide the commission with the length of a degree of longitude along the "West Line." The map was completed within a few weeks. As for the longitude measurement, Mason and Dixon reported with proper scientific qualification:

> By comparing our measuration of a Degree of the Meridian with that made under the Arctic Circle, supposing the Earth to be a Spheroid of an uniform Density: a Degree of Longitude in the Parallel of the West Line is 53.5549 Miles. But as the Earth is not known to be exactly a Spheroid, nor whether it is everywhere of equal Density, and our own Experiment being not yet finish'd; we do not give in this as accurate. [The modern value is 53.2773 statute miles.]

It was accurate enough to satisfy the commissioners, who indeed pronounced themselves highly gratified with the entire project. From England the Penns took pains to send Mason and Dixon a letter of appreciation. Mason himself was elected to membership in the American Philosophical Society—quite possibly through the suggestion of Benjamin Franklin.

Although the survey ended the Pennsylvania-Maryland-Delaware border dispute, the original charter prepared for George Calvert, first Lord Baltimore, continued to play tricks. This document had put the western limits for Maryland at "the first fountains of the Pattowmack," but the Potomac River has so many forks and branches that unanimity of opinion could hardly be expected as to just what point was represented by this specification. The Mason-Dixon survey actually ran about thirty miles west of what was finally fixed by the United States Supreme Court, in 1912, as the northwest corner of Maryland. And so, as it turned out, the Calverts had paid half of the cost of a portion of the survey which had no bearing on their territory. For both proprietors it was an expensive undertaking, costing in all the equivalent of at least $100,000 in modern currency.

On September 11, 1768, four years and ten months after their arrival, the English geodesists sailed from New York for Falmouth. In London, on November 11, they submitted a final bill for £3,512/9 s., including passage money. Both proprietors willingly paid. In August, they already had joined in a petition to the King in Council to ratify the settlement of the border along the line surveyed. The royal ratification had no legal effect, but both sides seemed to feel that a seal of approval had been placed on the whole.

The daily progress of the survey had been recorded in a set of field notes kept by Mason, from which a final report was made to the commissioners. This journal was almost lost to posterity. Following the preparation of the "fair copies" of the field data for deposit with the two proprietaries, Mason or his descendants either lost or discarded the original manuscript. In 1860 it turned up in Halifax, Nova Scotia, among a pile of papers consigned to a trash heap. It was included among the Canadian exhibits at the Philadelphia Centennial in 1876, where it was called to the attention of Hamilton Fish, Secretary of State. After a brief negotiation with its owner, Judge Alexander James of the Supreme Court of Nova Scotia, the State Department purchased it for five hundred dollars in gold. It is now on file in the National Archives.

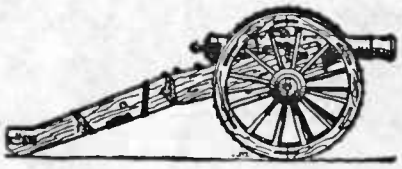
Jeremiah Dixon, always the lesser-known partner in the survey and other joint ventures with Mason, soon dropped out of history. He died in 1779. Charles Mason, for all his accomplishments as a scientist, fell into financial and physical decline in the early 1780's. In the fifteen years following the project in the New World, he had completed his star charts, which were to become a standard navigation aid, and had made various scientific expeditions for the Royal Society. Also, during this time, he assumed the responsibilities of a wife and family. But the remuneration for what was primarily a scholarly career was then, as now, inadequate for the demands of a growing household and declining health. Late in 1786 Mason turned up in Philadelphia with his wife and eight children. What prompted this return to the scene of his definitive project of twenty years earlier can only be conjectured. Apparently he had some hope that Franklin might be able to find a place for him. He may have thought of participating in the survey of western lands now opening up; but he died a few weeks after his arrival.

With the years, much of the work of the surveyors inevitably became undone. Some of the original boundary stones were removed, either by builders who found them handy for incorporating into a wall, or by farmers who found them in the way while plowing, or occasionally by someone who felt that his property was on the wrong side of the state line. In the western region, where earthen mounds had formed the markers, the elements tended to obliterate them. The first of several resurveys was begun in 1849 to re-establish the complex boundary relations at the northwest corner of Delaware. More refined instruments and more accurate astronomical and geodetic data for the mathematical evaluation of observations disclosed slight errors in the work of Mason and Dixon, but Lieutenant Colonel James D. Graham of the U.S.

Army Engineers, who supervised the 1849 resurvey, made a point of praising "the surprising accuracy" of the 1764 observations. Colonel Graham's reaction was to be echoed in 1885, when the U.S. Coast and Geodetic Survey confirmed the western extension of the line which divided Pennsylvania from what had become, in the meantime, West Virginia.

Another resurvey was run in 1902—again under joint commissions from Maryland and Pennsylvania and with the aid of the U.S. Coast and Geodetic Survey. Where practicable, the original markers were reset in concrete; otherwise, new stones were put in place with the dates 1766/7 and 1902 carved, respectively, on their eastern and western faces. The result, stated the commissioners in their final report, was to confirm the remarkably small degree of error in the work of Mason and Dixon, which was carried on through wild country without the benefit of modern instruments. For the two English scientists who laid down the line, this should be a sufficient memorial.

A. Hughlett Mason—no kin of Charles—has recently retired as senior physicist for the Army Chief of Staff. William F. Swindler, professor of legal history at the College of William and Mary, is a specialist in constitutional law and American political history.



The Enigma of General Howe

CONTINUED FROM PAGE 11

which they hoped would satisfy both the truculent King and his supporters as well as the opposition. They decided to appoint Vice Admiral Lord Richard Howe naval commander in North America, with the dual title of "peace commissioner."

Lord Howe was far more reluctant than his brother to take a military command, and his negotiations with his own government are another revealing instance of the family's thinking. The Admiral insisted that his brother be included as another peace commissioner, and he initially hoped the commission would be given broad powers of negotiation. But George III's attitude toward the colonies soon left Admiral Howe with little more than the power to grant pardons, while he was ordered to assert Parliament's right to tax, to demand payment for losses sustained by Loyalists, and to "correct and reform" colonial governments.

At one point, Howe almost resigned in disgust; the King agreed that he ought to do so, for the good of the service. But George's prime minister, Lord North, was as anxious as the Howes to reach an accommodation with America. North finally persuaded the Admiral to accept his commission and to rely for the success of his mission upon his personal charm and wide friendship with American leaders.

There is some evidence of a considerable gap between the King's punitive written instructions and the verbal assurances Howe received from the Ministry. When he came home in 1778, the Admiral declared in Parliament that everyone knew he and the administration had an affair to settle. But an even more compelling motive for Howe's acceptance of the enfeebled "peace commission" was his brother's assignment to put down the rebellion. As the leader of the family, Lord Howe had almost certainly advised William to accept his general's commission, which he could not resign now without being called coward, even traitor.

General William Howe, meanwhile, had retreated somewhat ignominiously from Boston on March 17, his departure hurried by the appearance of Washington's cannon on Dorchester Heights (see "Big Guns for Washington" in the April, 1955, AMERICAN HERITAGE). During his nine months in the city, the General's only triumph was the acquisition of blonde and beautiful Mrs. Joshua Loring as his mistress. Much has been made of this liaison, which continued throughout Howe's American campaigns. Judge Thomas Jones, the Loyalist historian, compared Howe to Mark Antony, declaring Sir William sacrificed an empire for the charms of his Boston Cleopatra. A mistress was hardly remarkable among eighteenth-century English aristocrats, shocking though she may have been to pious Americans, and there is not an iota of evidence that Mrs. Loring ever had the slightest influence on Howe's policies.

The General evacuated his forces from Boston, regrouped and refitted his regiments at Halifax, and joined his brother on Staten Island in the summer of 1776. Admiral Howe brought massive reinforcements of German mercenaries and English regulars, swelling the army to 32,000 men. Washington, against his better judgment, was committed to defend New York against this host with less than 20,000 soldiers, most of them untrained.

The Battle of Long Island was Howe's first exhibition of his talents as Commander in Chief. On August 27, 1776, attacking Americans entrenched in the commanding Brooklyn hills, Howe faked a frontal assault with half his army and after an all-night flanking march swept in upon his astonished enemies from the rear. In an hour the affair had turned into a total

6/~~8~~ 7/83 Alice Martin retrieved maps for Phase II Mason/Dixon marker survey use:
quads (Cecil Co, ~~Harford Co~~ returned 12/84, ~~Baltimore Co~~ returned 12/84, Carroll Co)
Tax Maps (Cecil Co, ~~Harford Co~~, Baltimore Co, Carroll Co, Washington Co)
1900-03 Resurvey Engineers maps (Cecil, Harford, Baltimore counties)
MD-DOT general Highway map (Allegany Co)